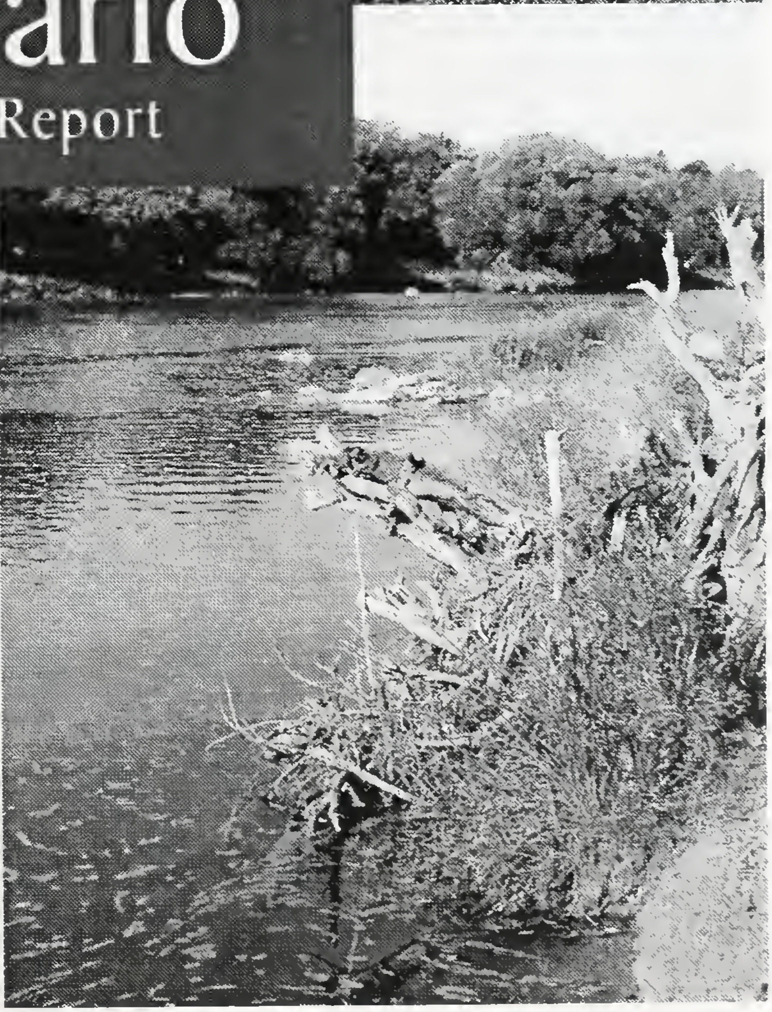
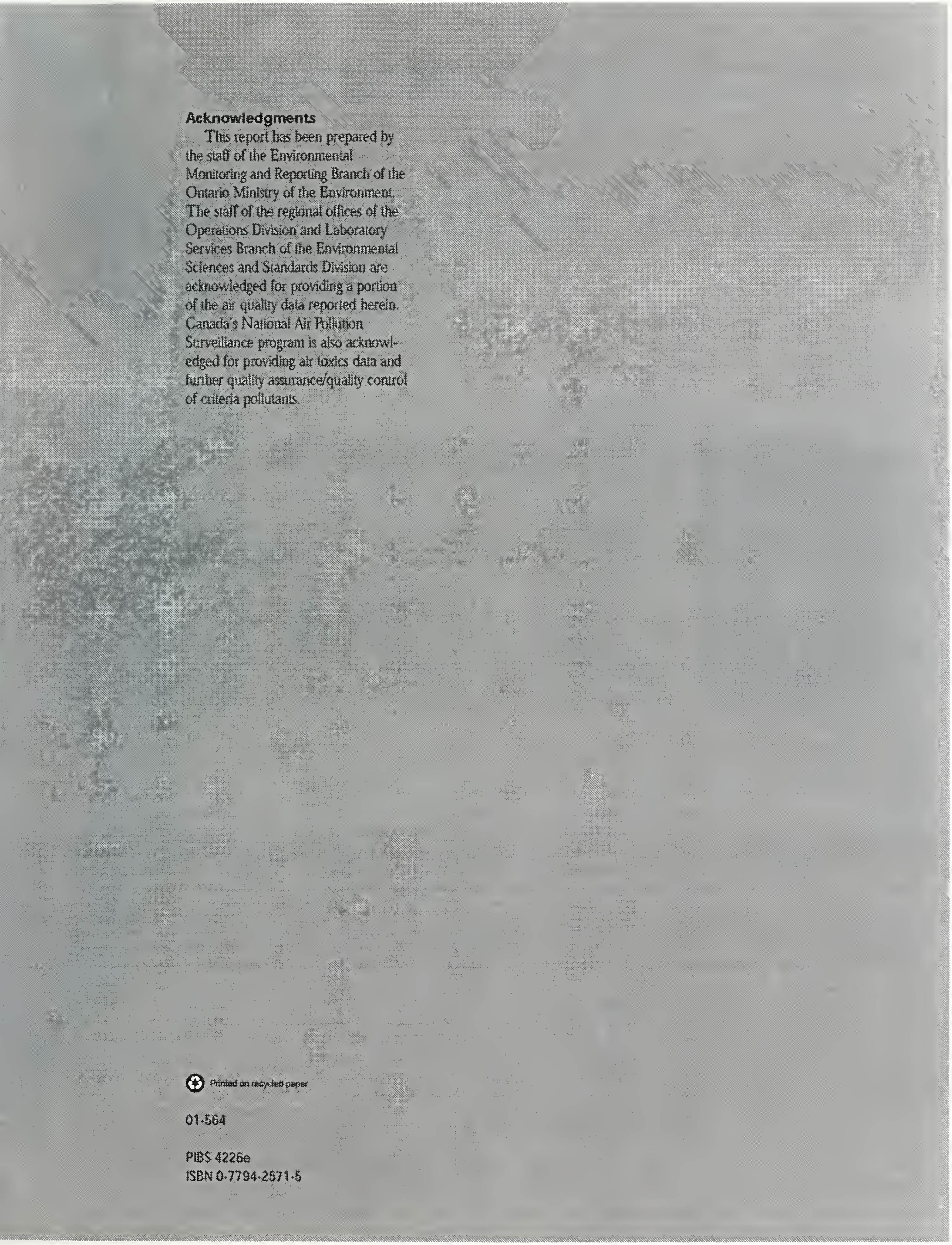
PIBS #4226e

Ontario

# Air Quality in Ontario

## 2000 Report





**Acknowledgments**

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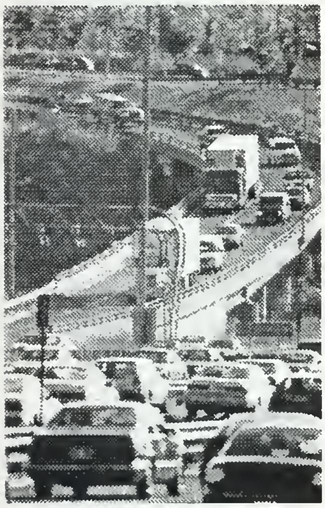
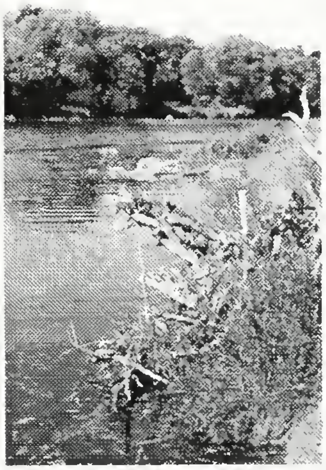
# 2000 Report Highlights





- Overall, air quality in Ontario improved significantly during the past 30 years, despite significant increases in Ontario's population, gross domestic product and vehicular travel over the same period.

- Levels of most major pollutants decreased significantly during the 30-year period. Averaged levels of sulphur dioxide were reduced by 83 per cent and carbon monoxide by 81 per cent. During the past 26 years, nitrogen oxides were reduced by 49 per cent and nitrogen dioxide by 23 per cent, and over the past 10 years, total reduced sulphur compounds have decreased 33 per cent.

- As in previous years, ground-level ozone and inhalable particles, the major ingredients of smog, continued to exceed ministry criteria levels in 2000. A major portion of Ontario's smog is a direct result of emissions from the U.S.

- On May 1, 2000, through the Air Quality Ontario Initiative, Ontario's enhanced Smog Alert and Air Quality Index program was implemented. This enhanced program provides the people of Ontario with improved reporting through comprehensive and timely air quality readings and forecasts.

- Good to very good AQI readings were reported more than 95 per cent of the time in 2000.

- Nine smog watches, and three smog advisories covering four days were called in 2000.

- Measured volatile organic compounds (VOCs) in 2000 indicated that levels are well below existing provincial criteria.

- In 2000, the air quality of a select number of Ontario's Great Lakes Basin cities (Windsor, London, Hamilton, Toronto and Thunder Bay) was generally better than the air quality of selective American cities (Cleveland, Detroit, Chicago and Minneapolis-St Paul) based on a comparative analysis of ten years of criteria pollutant data.

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## Chapter 1

# Overview

Air pollution is a problem and concern for many people who live in Ontario. Average air pollution levels in Ontario during the past 30 years have improved, but smog remains a concern especially in southern Ontario. Air pollution comes from many different sources including stationary sources such as factories, power plants and smelters; smaller area sources such as dry cleaners and degreasing operations; mobile sources such as cars, buses, trucks, planes and trains; and finally, natural sources such as forest fires, windblown dust and biogenic emissions from trees.

Many pollutants, including those that form smog (ozone and fine particles), remain in the atmosphere for long periods of time. These air pollutants can be generated both locally and regionally, and carried hundreds of kilometres by winds from province to province, state to state and country to country, affecting areas far removed from the source of the pollution.

This report tracks two kinds of air pollution trends: air concentrations based on actual measurements of pollutants in the ambient outdoor air, and air emissions based on best available estimates of the total mass of pollutants released into the air each year as provided by source engineers.

The Ontario Ministry of the Environment collects air quality data at 80 continuous monitoring sites across the province. These data are surrogates to determine the state of air quality in Ontario and help develop abatement programs to reduce the burden of air pollutants, address key air issues and assess the efficacy of policy and programs. Ambient air monitoring in Ontario provides information of the actual concentrations of selected pollutants in communities across Ontario. Table 1.1 shows the relationship between the monitored air pollutants and the current air issues.

For the past 30 years, the Ministry of the Environment has been monitoring air quality across Ontario and using this information to:

- inform the public about outdoor ambient air quality;
- provide smog alerts for public health protection;
- assess Ontario's air quality and evaluate trends;

**Table 1.1: Linkages Between Air Pollutants and Air Issues**

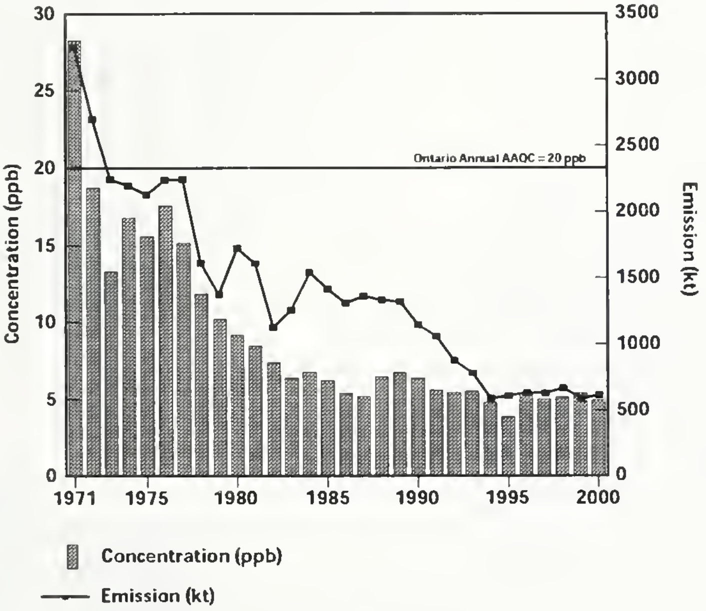
| | Smog | Global Warming | Urban Air Quality | Acid Deposition | Health | Aesthetics |
|---|---|---|---|---|---|---|
| Ozone | yes | yes | yes | yes | yes | |
| Sulphur Dioxide | yes | yes | yes | yes | yes | yes |
| Carbon Monoxide | yes | yes | yes | | yes | |
| Nitrogen Oxides | yes | yes | yes | yes | yes | yes |
| Volatile Organic Compounds | yes | yes | yes | | yes | yes |
| Toxics | yes | | yes | | yes | |
| Particles | yes | yes | yes | yes | yes | yes |
| Total Reduced Sulphur Compounds | | | yes | | yes | yes |

- identify areas where criteria are exceeded and identify the origins of pollutants;
- provide the basis for air policy/program development;
- provide quantitative measurements to enable abatement of specific sources;
- determine the significance of pollutants from US sources and their effects on Ontario;
- provide air quality researchers with data linking environmental and human health effects to air quality.

This report, the 30th in a series, summarizes the state of ambient air quality in Ontario during 2000. It covers the measured levels of the six traditional contaminants consisting of ozone ($O_3$), particulate matter ($PM_{10}$ / $PM_{2.5}$), sulphur dioxide ($SO_2$), nitrogen dioxide ($NO_2$), carbon monoxide (CO) and total reduced sulphur (TRS) compounds. For the first time, the ministry's annual report contains data on ambient mercury (Hg) levels. The report also summarizes the results from the Air Quality Index (AQI) and Smog Alert programs for 2000. In addition, results for a selected number of VOCs are summarized and a perspective on the state of air quality in the Great Lakes Basin area is also presented.

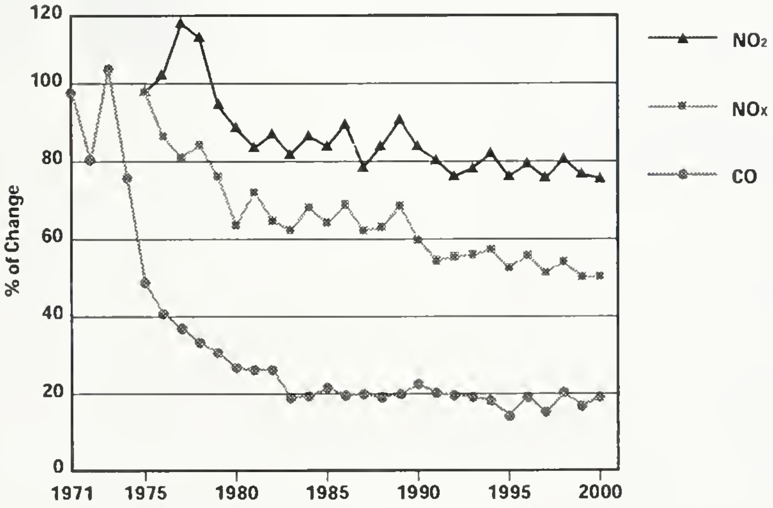
The main focus of the 2000 publication is to report in a timely manner on the state of Ontario's ambient air quality. The data for the source monitoring sites, as in the past will be presented in a separate appendix document, along with the ambient data. Ontario continues to benefit from one of the most comprehensive air monitoring systems in North America. The network is designed to measure air quality at 80 continuous monitoring sites across the province and undergoes ongoing maintenance to ensure a high standard of quality control. With this data we can make informed decisions about what needs to be done to protect and improve our air quality.

**Figure 1.1: Trend of Sulphur Dioxide Concentrations (1971 - 2000)**



Note: Annual composite mean based on 11 sites operated over 30 years.

**Figure 1.2: Change in Air Pollutant Concentrations (1971 - 2000)**



Note: NOx and NO2 data from 15 sites beginning in 1975. CO data from 9 sites.

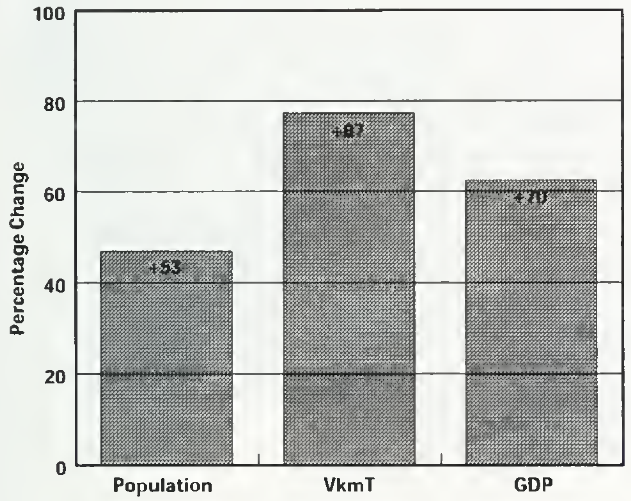
## Trends in Air Quality and Emissions

Each year the ministry gathers and analyzes air concentration data from ambient monitoring sites across Ontario. During the past 30 years, significant reductions have been achieved in ambient provincial pollution levels. Ministry programs and policies have led the way to these significant reductions. One of the best examples is the 30-year sulphur dioxide trend (Figure 1.1). Sulphur dioxide is emitted primarily by burning fossil fuels containing sulphur, smelting operations, and in the pulp and paper processes in Ontario.

Ontario Regulations 346 and 350, control orders on major smelting operations and the Countdown Acid Rain program have helped reduce $SO_2$ emissions in the province by 82 per cent since 1971. A similar decrease in ambient $SO_2$ concentrations (83 per cent) has been recorded over the same 30-year period.

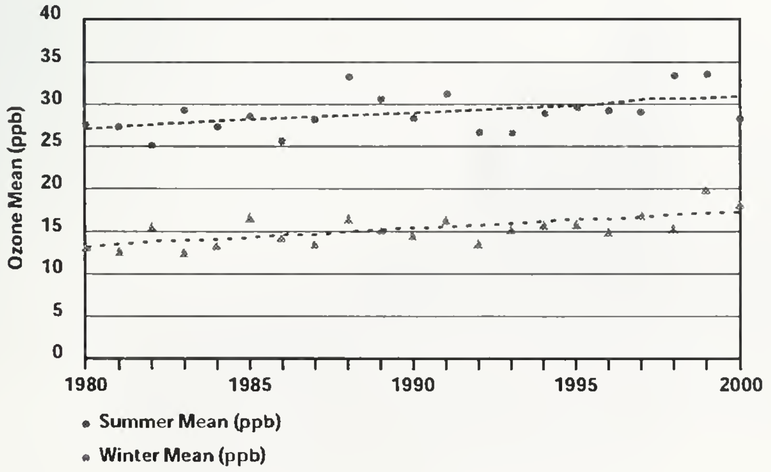
Other examples of air quality improvement: CO levels decreased 81 per cent during the past 30 years; $NO_2$ levels decreased 23 per cent and oxides of nitrogen ($NO_x$) 49 per cent over the past 26 years (Figure 1.2). These reductions occurred during significant population and economic growth in Ontario. Since 1971, the provincial population increased 53 per cent and vehicle kilometres travelled were up 87 per cent. Gross domestic product has increased 70 per cent since 1981 (Figure 1.3).

**Figure 1.3: Ontario's Population, Vehicle-Kilometres Travelled and Gross Domestic Product (1971 - 2000)**



Note: VkmT - vehicle kilometres travelled.
GDP - gross domestic product (1981 - 2000).
Source: Population and GDP - Statistics Canada; VkmT - Environment Canada.

**Figure 1.4: Trend of Seasonal Ozone Means at Sites Across Ontario (1980 - 2000)**



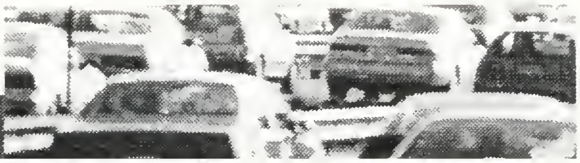
Note: Data from 18 ozone sites; summer (May to Sept.); winter (Dec. to Feb.).

Ground-level ozone and fine particles however, remain a concern in Ontario, especially in the Windsor-to-Ottawa corridor. Ozone and fine particles continue to exceed their respective ambient air quality criteria (AAQC) at the majority of monitoring locations in southern Ontario. The trend of the ozone seasonal means (summer and winter) for 1980 to 2000 is shown in Figure 1.4. It shows that there has been an increasing trend in the composite seasonal ozone means during the 21-year period. Similar findings of an increasing trend for ozone have been noted elsewhere in North America.

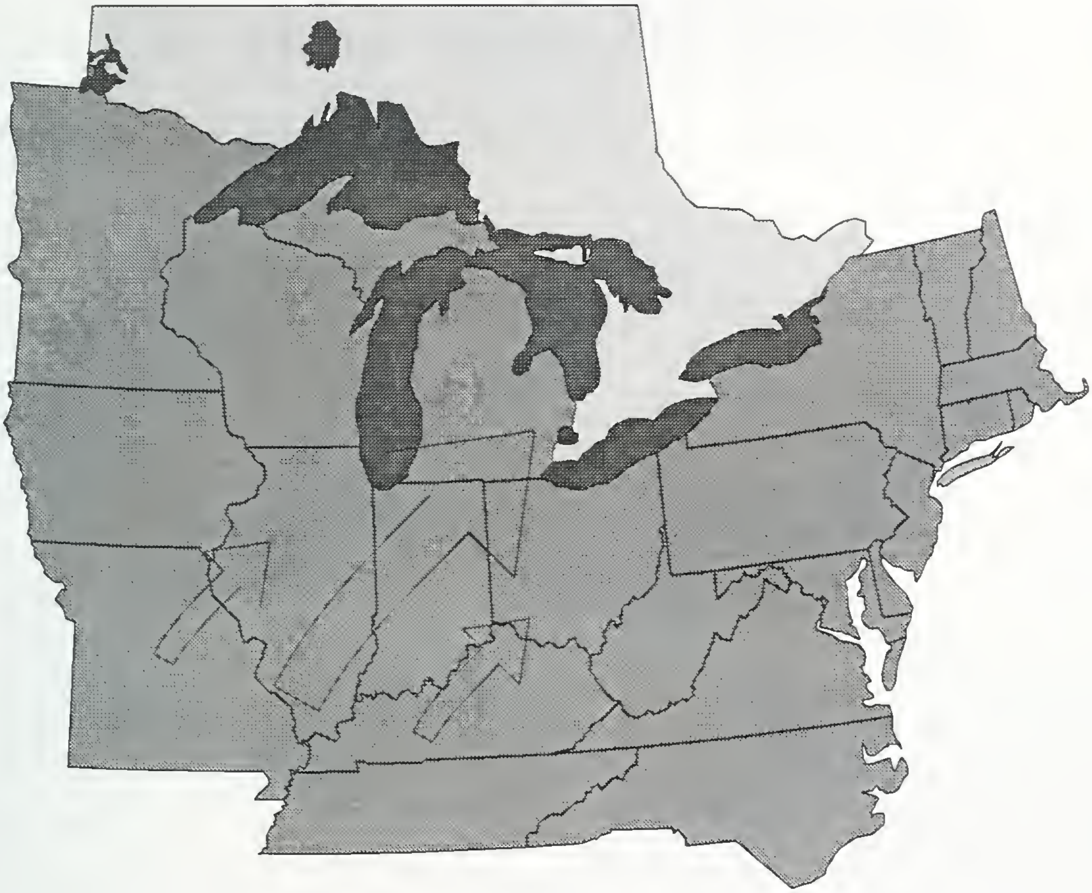
Occurrences of ozone exceeding the criterion, and/or the number of such occurrences covering wide areas, tend to vary substantially from year to year because of the weather. The year 2000 is a good example of how weather can affect air quality and, in particular, ozone levels. In 2000, the second lowest total of ozone exceeedances was recorded since 1980. This is mostly attributed to the 2000 smog season (May to September) being characterized as cooler and wetter than normal.

Significant amounts of ozone and its precursors are carried into Ontario from the United States. During hot summer days it is estimated that more than half of the province's ozone can be attributed to transboundary pollution. Figure 1.5 shows the prevailing winds during days of widespread elevated ozone levels in Ontario.

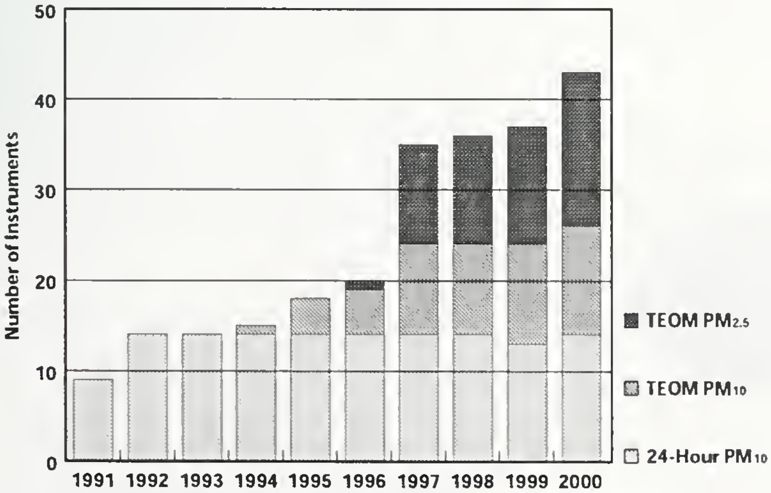
Throughout the 1990s and more recently from 1996 to 2000, the ministry increased monitoring for inhalable particles due to growing health concerns, and its association with transboundary pollution. Figure 1.6 shows the growth of Ontario's ambient PM program from 1991 to 2000. Results are discussed in Chapter 3.



## Figure 1.5: Transboundary Air Flow into Ontario



## Figure 1.6: Expansion of Ontario's Ambient PM Monitoring Program (1991 - 2000)



Note: Metals in $PM_{10}$ and sulphate in $PM_{10}$ are available from 24-Hour $PM_{10}$ Samples.
TEOM - Tapered Element Oscillating Microbalance.

## Chapter 2

# Ozone in Ontario

Ground-level ozone is a gas formed when nitrogen oxides and volatile organic compounds react in the presence of sunlight. Ground-level ozone is a primary component of smog and is different from the ozone in the layer high above the earth that protects us from the sun's harmful ultra-violet (UV) rays. The formation and transport of ozone are strongly dependent on meteorological conditions. Changing weather patterns contribute to short-term and year-to-year differences in ozone concentrations. In Ontario, elevated concentrations of ground-level ozone are generally recorded on hot, sunny days from May to September between noon and early evening.

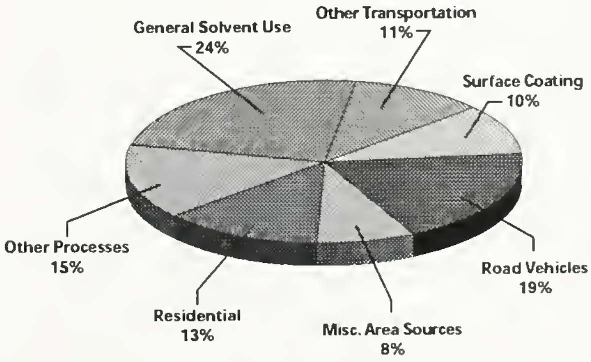
## Characteristics, sources and effects

Ozone is a colourless, odourless gas at ambient concentrations, and is a major component of smog.

Ground-level ozone is not emitted directly into the atmosphere, however, it results from chemical reactions between volatile organic compounds (VOCs) and nitrogen oxides (NOx) in the presence of heat and sunlight. Figure 2.1 shows estimates by sector of Ontario's VOC emissions caused by human activity. Transportation sectors account for approximately 30 per cent of VOC emissions. However, owing to the large forested area in Northern Ontario, biogenic VOC emissions in Ontario are significant - approximately three times those from sources caused by human activity. The sources of NOx are discussed in the nitrogen dioxide section in Chapter 4.

Ozone irritates the respiratory tract

**Figure 2.1: Ontario VOC Emissions by Sector**
**(Emissions From Human Activity, 2000 Estimates)**



and eyes. Exposure to high levels of ozone results in chest tightness, coughing and wheezing. Children active outdoors during the summer when ozone levels are at their highest are most at risk of experiencing such effects. Other groups at risk include individuals with pre-existing respiratory disorders such as asthma and chronic obstructive lung disease. Ground-level ozone has been linked to increased hospital admissions and premature deaths. Ozone also causes agricultural crop loss each year in Ontario and noticeable leaf damage in many crops, garden plants and trees.

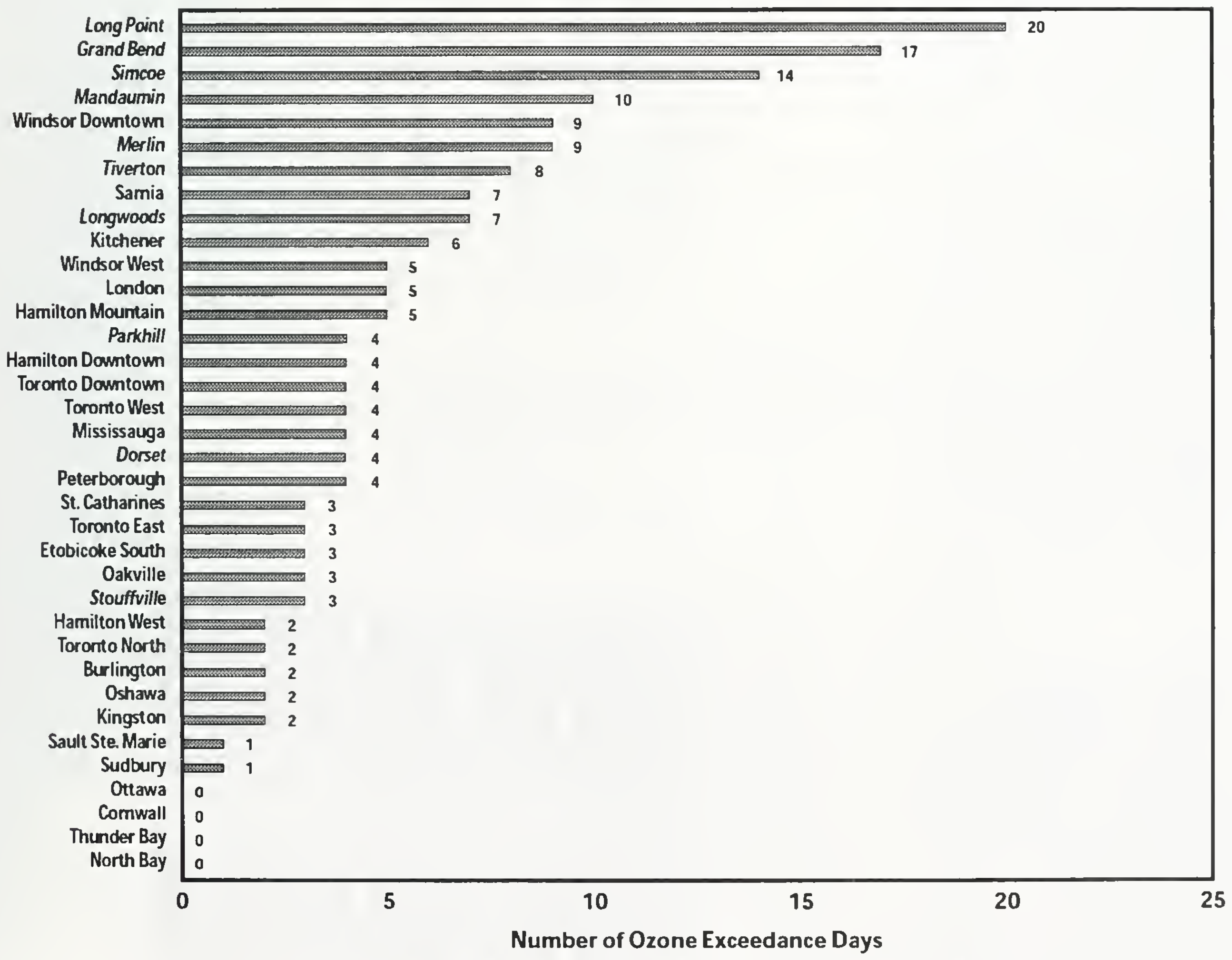
### Monitoring results for 2000

Ground-level ozone was monitored at 38 ambient locations during 2000, however, only 36 sites (26 urban and 10 rural) had sufficient data to be used in the analysis presented here. Once again the highest annual mean (33.1 ppb) was measured at Long Point, a rural site on the northern shore of Lake Erie, while the lowest annual mean (16.9 ppb) was measured at Hamilton West. Generally, ozone is lower in urban areas because it is removed by reaction with nitric oxide emitted locally by vehicles.

Among urban sites in 2000, London recorded the highest one-hour concentration (110 ppb), Kitchener recorded the greatest number of instances (25 hours) of ozone above the one-hour AAQC of 80 ppb, and Peterborough recorded the highest annual urban mean (28.1 ppb).

At rural sites, Grand Bend on the eastern shore of Lake Huron measured

**Figure 2.2: Number of Ozone Exceedance Days at Sites Across Ontario (2000)**

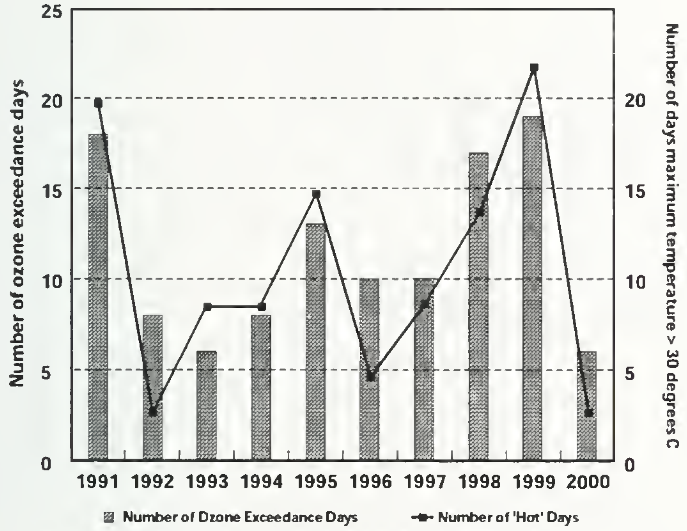


Note: Rural sites are italicized; an ozone exceedance day has at least 1 hour > 80 ppb.

the highest one-hour concentration (128 ppb) and Long Point recorded the most number of instances (105 hours) above Ontario's one-hour AAQC.

Ground-level ozone continues to exceed its provincial criterion across the province. In 2000, Ontario's one-hour ozone AAQC was exceeded at 32 of 36 monitoring stations on at least one occasion. All sites in Ontario except Ottawa, Cornwall, Thunder Bay and North Bay recorded at least one hour of elevated ozone (above 80 ppb) in 2000. People with heart and lung problems are at higher risk when ozone levels exceed 80 ppb. Sensitive people may experience trouble breathing and their health may be affected if they engage in vigorous exercise.

**Figure 2.3: Trend of Ozone Exceedance Days and 'Hot' Days (1991 - 2000)**



Note: 22 ozone sites operated over 10 years; an ozone exceedance day has at least one hour > 80 ppb.
Number of 'Hot' Days is based on observations from 8 sites where maximum daily air temperatures > 30 degrees C.

**Figure 2.4: Trend of VOC Emission Estimates (1991 - 2000)**

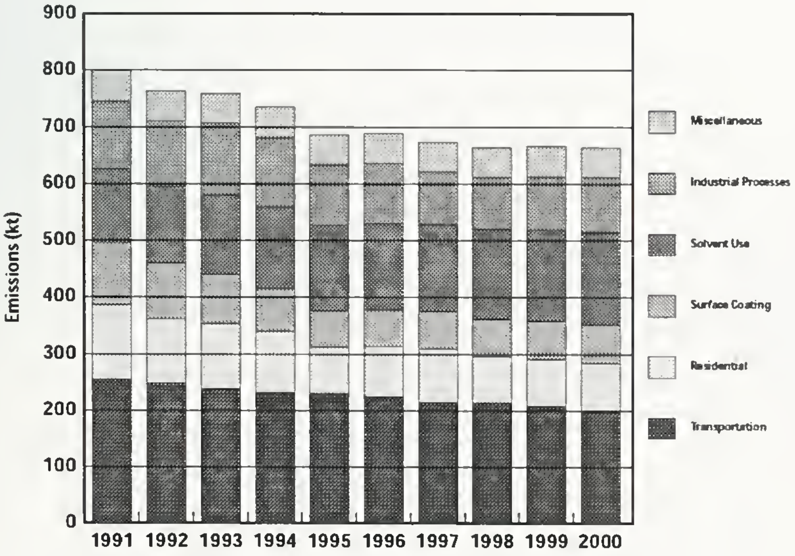


Figure 2.2 shows the number of ozone exceedance days (a day with at least one hour above the 80 ppb AAQC) at sites across Ontario for 2000. Long Point recorded the most exceedance days (20) or about five per cent of the days in 2000. This is significantly lower than the 38 and 42 exceedance days recorded at Long Point in 1998 and 1999 respectively and, is mostly attributed to the cool, wet summer of 2000. Among the next eight ozone sites recording the highest number of exceedance days in 2000, all are located in southwestern Ontario and six of the eight are monitoring in rural areas.

In general, ozone levels in southern Ontario decrease from southwest to northeast. As previously mentioned, more than 50 per cent of provincial ozone levels during widespread smog episodes are due to long range transport of ozone and its precursors from neighbouring U.S. States. This U.S. contribution is expected to be much higher (as much as 90 per cent) in Ontario cities and towns on the northern shores of Lake Erie, the eastern shores of Lake Huron and in the extreme southwest near the U.S. border.

## Trends

Figure 2.3 shows the distribution of the province-wide ozone exceedance days (at least one hour > 80 ppb) and the number of hot days (those days with maximum air temperatures greater than 30°C) for the period 1991 to 2000. The number of hot days and the number of ozone exceedance days show a similar trend over the 10-year period. Just as the highest number of exceedance days in 1999 is attributed to the weather (highest number of hot days), the lowest numbers in 2000 reflect conditions less favourable to the

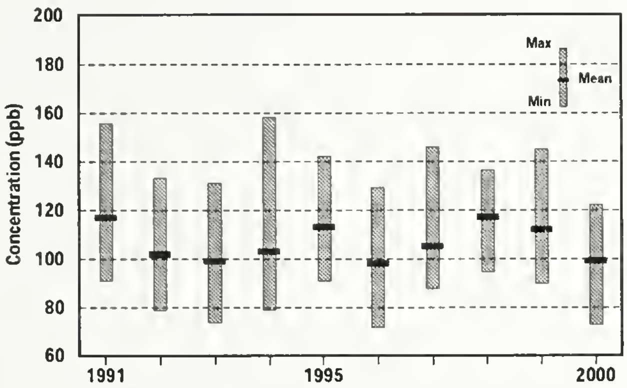
formation and transport of ozone from the U.S.

Province-wide VOC emissions show a decreasing trend for the period 1991 to 1996, after which they have remained fairly constant to 2000 (Figure 2.4). New vehicle emission standards in the early 1990s and the shift in the consumption of residential fuels from oil and wood to natural gas probably contributed to this trend. Emissions from forest fires and natural sources are not included in the trend; these emissions may be as high as three times the emissions from human activity.

The introduction of lower gasoline volatility beginning in the summer of 1989 has resulted in a 3.1 per cent decrease in VOC emissions during 2000. As well, the implementation of Ontario's Drive Clean vehicle inspection program has contributed to an additional reduction in VOC levels. Overall, there has been a 17 per cent reduction in VOC emissions over the period 1991 to 2000.

The trend in composite one-hour maximum ozone concentrations is shown for 1991 to 2000, in Figure 2.5. For the 10-year period, the composite mean of the maximum one-hour concentrations range from 98 to 117 ppb. The composite rural hourly maximum ozone concentration is on average about 10 per cent higher than the corresponding composite urban one-hour maximum.

**Figure 2.5: Trend of Ozone Concentrations (1991 - 2000)**



Note: Annual composite maximum one-hour ozone based on 18 ozone sites operated over 10 years.

## Chapter 3

# Particles in Ontario's Air

Particulate matter (PM) is the general term used for a mixture of solid particles and liquid droplets found in the air. These particles, which come in a wide range of sizes, originate from many different stationary and mobile sources as well as from natural sources. They may be emitted directly from a source or formed in the atmosphere by the transformation of gaseous emissions. This chapter discusses the ambient monitoring results and trends for the 24-hour (sampling every sixth day) inhalable particles ($PM_{10}$) network, and the real-time continuous inhalable ($PM_{10}$) and respirable ($PM_{2.5}$) particle network.

### Characteristics, sources and effects

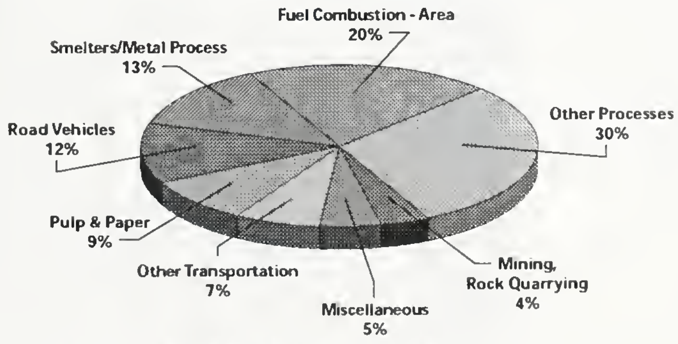
Particles include aerosols, smoke, fumes, dust, fly ash and pollen. Composition varies with place and season. Particles in the atmosphere have been characterized according to size mainly because of the different health effects from particles of different diameters. Particles less than 10 microns and 2.5 microns in diameter are defined as inhalable particles ($PM_{10}$) and respirable particles ($PM_{2.5}$), respectively. The smaller the particle size the further the particle will penetrate into the lungs.

$PM_{10}$ particles are emitted from industrial sources such as fuel combustion, energy production, incineration, construction, mining, metal smelting and processing (Figure 3.1). In the urban airshed, motor vehicle exhaust, residential wood combustion and road dust are the major sources. Natural sources include wind-blown soil, forest fires, ocean spray and volcanic activity. $PM_{2.5}$ material is primarily formed from chemical reactions in the atmosphere and through combustion.

The greatest effect on health is from particles 10 microns or less in diameter, which can aggravate bronchitis, asthma and other respiratory diseases. People with asthma, cardiovascular or lung disease, as well as children and elderly people, are considered to be the most sensitive to the effects of particles. Particles are also responsible for corrosion, soiling, damage to vegetation and reductions in visibility.

As a result of the growing concern for health effects due to inhalable particles, Ontario introduced, in November

**Figure 3.1: Ontario $PM_{10}$ Emissions by Sector**
(Emissions From Human Activity, 1995 Estimates*)



[1] Emissions from road dusts, construction, agricultural, etc., are not included.
[2] Emissions from open sources from the smelters are not available.
* Most recent estimates.

1997, an interim inhalable particulate (PM₁₀) criterion of 50 µg/m³ on a 24-hour basis. More recently (June 2000), a draft Canada-Wide Standard (CWS) was signed for PM smaller than 2.5 microns (PM₂.₅), as they pose the greatest potential for human health effects. The proposed CWS for PM₂.₅ uses 30 µg/m³ on a 24-hour basis. These criteria levels will be used as yardsticks for assessing the data in the following discussion.

## Monitoring results for 24-hour inhalable particles (PM₁₀)

Throughout the 1990s and more recently from 1996 to 2000, the ministry has increased monitoring for the smaller fraction (less than 10 microns) of the particulate matter due to growing health concerns, and its association with transboundary pollution. In 2000, Ontario had a total of 43 ambient PM monitors operating across the province, which is more than double the 20 PM monitors operating in 1996.

Twenty-four hour inhalable particles (six-day sampling cycle) are measured by a modified hi-volume (hi-vol) sampler outfitted with a size selective inlet to restrict particle size to less than 10 microns. This is the size range of the particle most likely to be inhaled and deposited into the deepest part of the lung (thoracic region). The daily mass of the inhalable particles is computed from the mass of the collected particles and the volume of air sampled. Quartz fibre filters are used as the filter medium for collection. The filters are also analyzed for metals and sulphate composition. These results are presented in the appendix to this report.

In 2000, 24-hour PM₁₀ levels were measured at 25 urban locations. Twelve of the 25 sites monitored ambient levels and will be included in the discussion here. Annual statistics for the remaining 13 sites, which are located in the vicinity of specific sources, can be found in the separate appendix document.

Figure 3.2 shows the distribution of the 24-hour PM₁₀ annual geometric means at ambient sites across Ontario. The two sites recording the highest annual means during 2000 were both located in Windsor. The Windsor Wyandotte Street and Windsor Downtown sites recorded annual means of 26.5 and 26.2 µg/m³ respectively, indicating transboundary impact. The maximum 24-hour concentration (99 µg/m³) was measured in Oakville.

Eight of the 12 ambient PM₁₀ sites recorded exceedances of the 24-hour interim criterion (50 µg/m³) during 2000. The highest percentage of exceedance days (15.8) was recorded at the two sites in Windsor, once again indicating transboundary impact.

**Figure 3.2: 24-Hour PM₁₀ Annual Geometric Means (2000)**

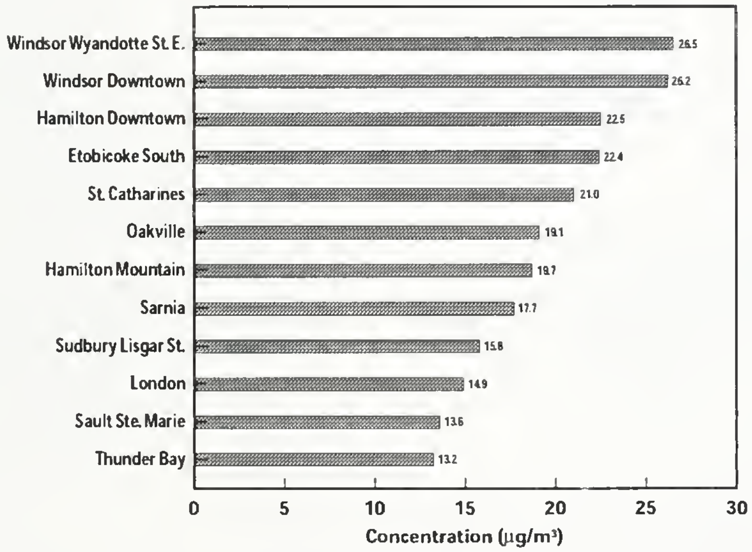
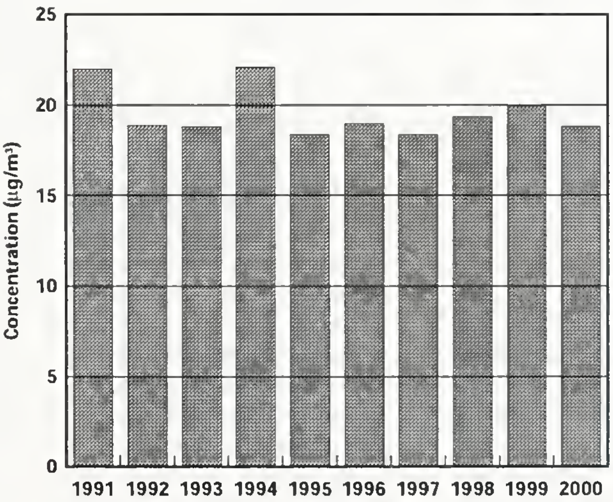


**Figure 3.3: Trend of 24-Hour PM₁₀ (1991-2000)**



Note: Annual composite geometric mean based on 24-h PM₁₀ data for six ambient urban sites over 10 years.

### Trends in 24-hour $PM_{10}$

The provincial trend in 24-hour $PM_{10}$ levels for six ambient urban locations over the past ten years is shown in Figure 3.3. No trend is apparent. However, the highest composite geometric mean (22.1 µg/m³) was measured in 1994 and the lowest mean (18.4 µg/m³) in 1995 and 1997. The 2000 composite mean was 18.8 µg/m³.

### Real-time $PM_{10}/PM_{2.5}$ monitoring

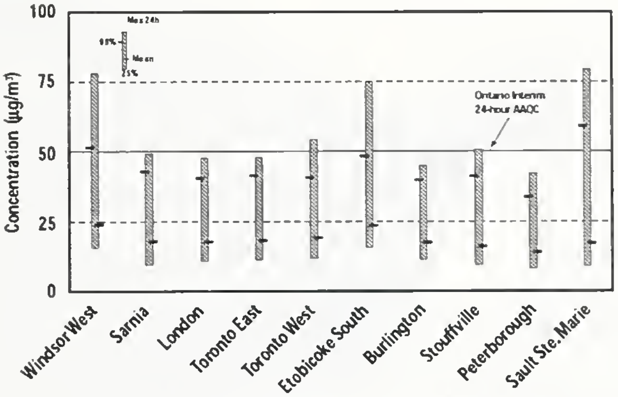
In June of 1995, the ministry installed a state-of-the-art continuous (inhalable and respirable) monitoring network of five sites across the province. By 2000, this network had increased in size to a total of 27 ambient sites, 10 $PM_{10}$ and 17 $PM_{2.5}$. Continuous hourly measurements of inhalable and respirable particles are obtained by the Tapered Element Oscillating Microbalance (TEOM) method. The $PM_{10}/PM_{2.5}$ monitoring is intended to allow capture of immediate changes in inhalable particle levels in urban communities, near local industries and in areas affected by transboundary sources.

### Monitoring results for real-time $PM_{10}/PM_{2.5}$

In 2000, monitoring for real-time $PM_{10}$ was conducted at 10 ambient monitoring locations. The 24-hour statistics for 2000 for the ten locations are shown in Figure 3.4. The annual mean levels for $PM_{10}$ at the 10 ambient sites ranged from a low of 14.2 µg/m³ in Peterborough to a maximum of 24.2 µg/m³ in Windsor. The highest 24-hour average (79.4 µg/m³) was recorded at the Wm. Merrifield school site in Sault Ste. Marie. The provincial ambient average for $PM_{10}$ during 2000 was 18.7 µg/m³.

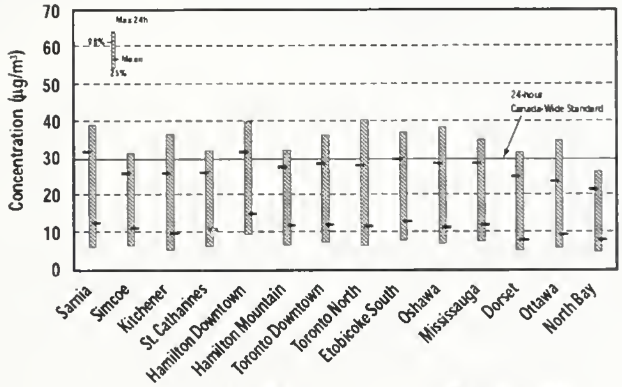
In 2000, continuous monitoring for $PM_{2.5}$ was conducted at a total of 17 ambient monitoring locations. Fourteen of the 17 sites recorded sufficient data to be discussed here and their 24-hour statistics are shown in Figure 3.5. The annual mean levels ranged from a low of 8.0 µg/m³ in North Bay to a maximum of 15.0 µg/m³ in downtown Hamilton. The highest 24-hour average (40.4 µg/m³) was recorded at Toronto North. The provincial ambient average for $PM_{2.5}$ during 2000 was 11.2 µg/m³. During 2000, the 98th percentile was exceeded at only two locations, Hamilton Downtown and Sarnia.

**Figure 3.4: Summary Statistics for 24-Hour $PM_{10}$ as Measured by TEOM (2000)**



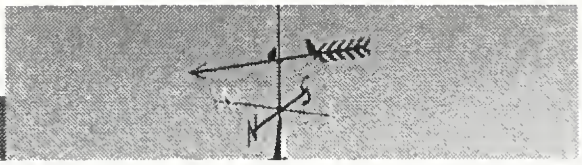
Note: Data from ambient sites; TEOM - Tapered Element Oscillating Microbalance.

**Figure 3.5: Summary Statistics for 24-Hour $PM_{2.5}$ as Measured by TEOM (2000)**

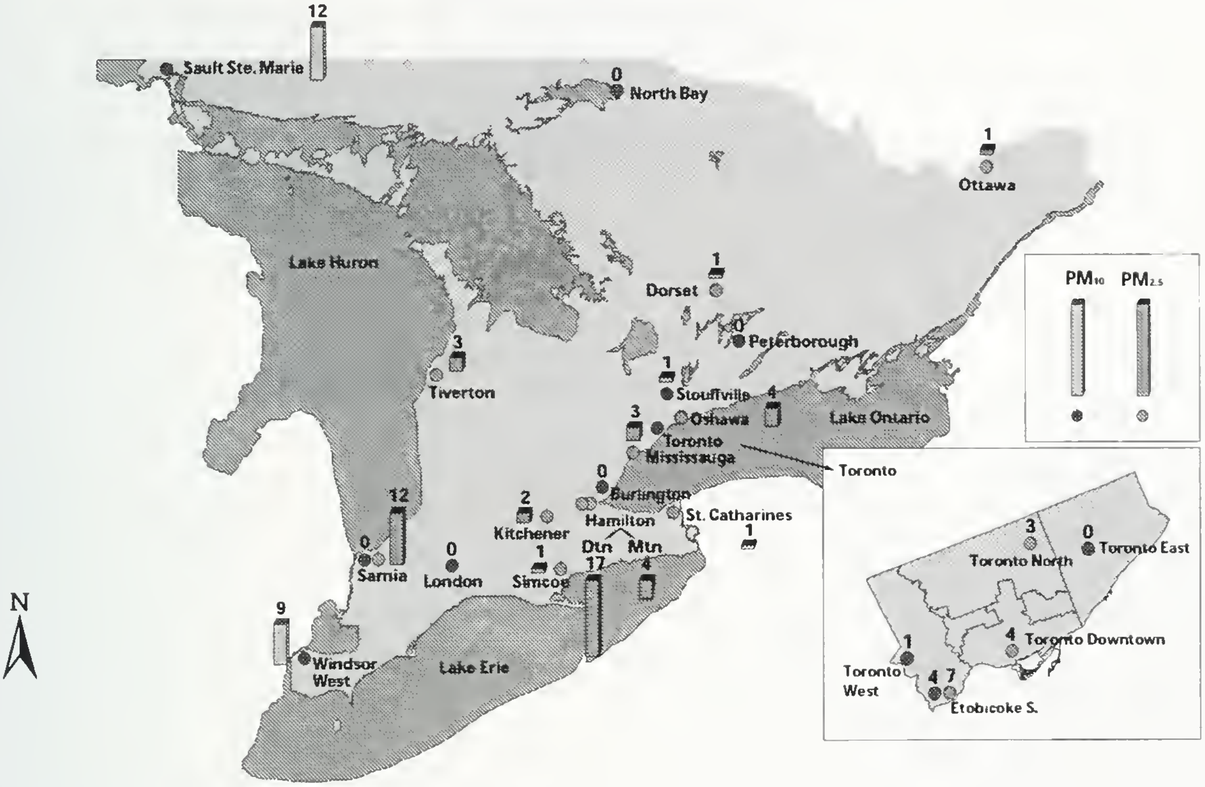


Note: Data from ambient sites; TEOM - Tapered Element Oscillating Microbalance.

The geographical distribution of the number of $PM_{10}$ exceedance days (24-hour concentration greater than Ontario's interim of AAQC of 50 µg/m³) and $PM_{2.5}$ exceedance days (24-hour concentration greater than the proposed CWS of 30 µg/m³) is shown in Figure 3.6. Only five of the ten $PM_{10}$ monitoring sites recorded exceedance days during 2000. The highest number of exceedance days were recorded in Sault Ste. Marie (12 days) followed by Windsor (9 days), Etobicoke South (4 days), Toronto West and Stouffville (1 day). The number of $PM_{2.5}$ exceedance days ranged from 0 in North Bay to 17 in Hamilton. All $PM_{2.5}$ monitoring sites in southern Ontario recorded at least one exceedance day during 2000.



## Figure 3.6: Geographical Distribution of $PM_{10}$/$PM_{2.5}$ Exceedance Days Across Ontario (2000)



Note: Ontario Interim 24-Hour $PM_{10}$ AAQC is 50 $\mu g/m^3$.
Proposed Canada-Wide Standard for 24-Hour $PM_{2.5}$ uses 30 $\mu g/m^3$.

# Other Criteria Contaminants

Characteristics, sources and effects of sulphur dioxide ($SO_2$), nitrogen dioxide ($NO_2$), carbon monoxide (CO), total reduced sulphur (TRS) compounds and mercury (Hg) are discussed in this chapter, as well as their ambient concentrations for 2000 and trends over time where applicable. Corresponding annual emission estimate trends are also discussed.

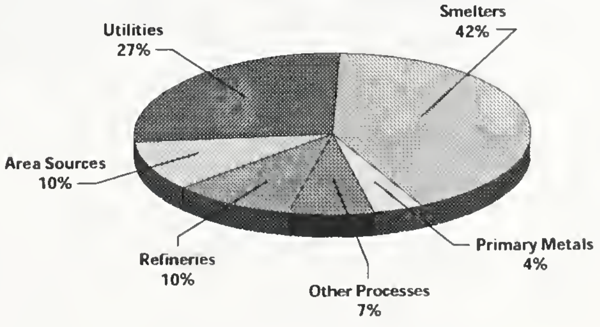
## ULPHUR DIOXIDE ($SO_2$)

### Characteristics, sources and effects

$SO_2$ is a colourless gas that smells like burnt matches. It can be oxidized to sulphur trioxide, which in the presence of water vapour is readily transformed to sulphuric acid mist. $SO_2$ can also be oxidized to form sulphuric acid aerosols. $SO_2$ is also a precursor to sulphate salts, which are one of the main components of respirable particles in the atmosphere.

Approximately 69 per cent of the $SO_2$ emitted in Ontario in 2000 came from smelters and utilities (Figure 4.1). Other industrial sources include iron and steel mills, petroleum refineries, and pulp and paper mills. Lesser sources include residential, commercial and industrial space heating. The highest concentrations of $SO_2$ historically have

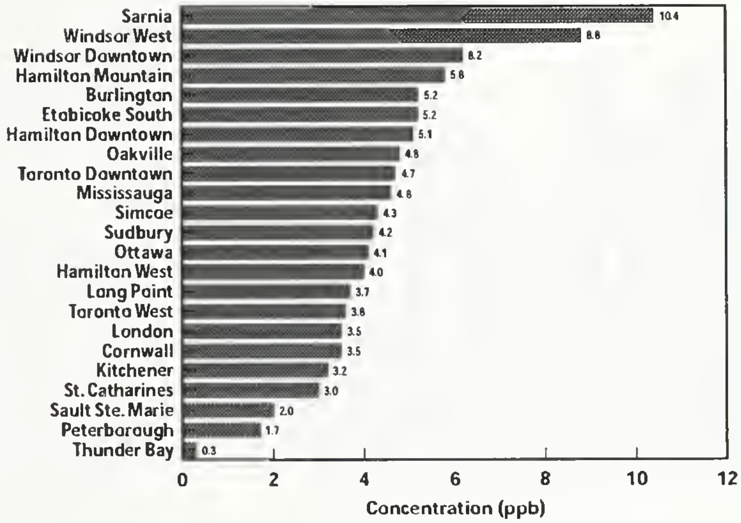
**Figure 4.1: Ontario Sulphur Dioxide Emissions by Sector**
**(Emissions From Human Activity, 2000 Estimates)**



been recorded in the vicinity of large industrial sources.

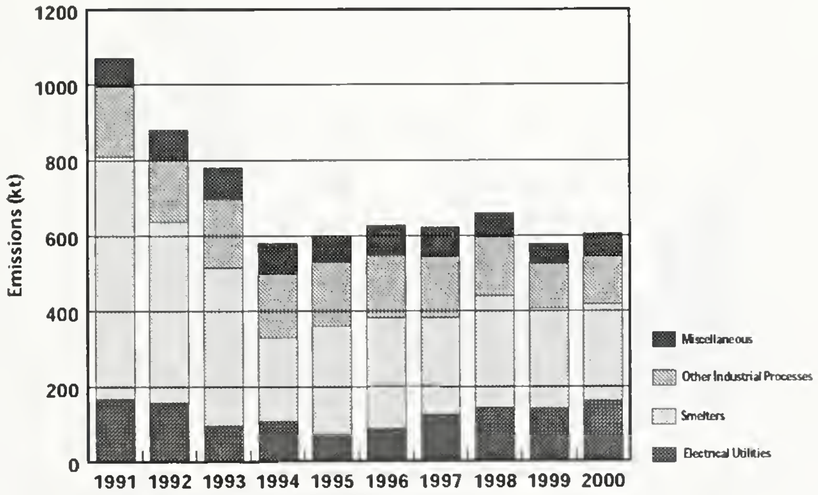
Health effects caused by exposure to high levels of $SO_2$ include breathing problems, respiratory illness, changes in the lung's defences, and worsening respiratory and cardiovascular disease. People with asthma, chronic lung or heart disease are the most sensitive to $SO_2$. $SO_2$ also damages trees and crops. $SO_2$ and $NO_x$ are the main precursors of acid rain, which contributes to the acidification of lakes and streams, accelerated corrosion of buildings, and reduced visibility. $SO_2$ also causes formation of microscopic acid aerosols, which have serious health implications and contribute to climate change.

### Figure 4.2: Annual Sulphur Dioxide Means (2000)



Note: Data from ambient sites.
Ontario annual AAQC for sulphur dioxide is 20 ppb.

### Figure 4.3: Trend of Sulphur Dioxide Emission Estimates (1991-2000)



## Monitoring Results for 2000

Monitoring for $SO_2$ was performed at 24 ambient locations in 2000, however, only 23 sites had sufficient data to be used in the analysis presented here. Sarnia recorded both the highest annual mean (10.4 ppb) and the maximum 24-hour concentration (78.1 ppb) during 2000. Science North in Sudbury recorded the highest one-hour concentration (567 ppb). In 2000, the Science North site in Sudbury and the Mississauga site were the only ambient sites to record an instance above the $SO_2$ one-hour criterion of 250 ppb. The $SO_2$ one-hour criterion was exceeded five times at the Science North site and only one time at the Mississauga site in 2000. However, the 24-hour criterion for $SO_2$ (100 ppb) was not exceeded at any ambient site in Ontario during 2000.

Figure 4.2 shows the annual $SO_2$ means at ambient sites across Ontario. Sarnia and Windsor recorded the highest annual levels in 2000. The annual levels across the province ranged from 0.3 ppb in Thunder Bay to 10.4 ppb in Sarnia. The annual criterion of 20 ppb for $SO_2$ was not exceeded in 2000.

## Trends

As mentioned earlier in the report, over the long term, 1971-2000, Ontario's $SO_2$ emissions decreased by 82 per cent, while average ambient $SO_2$ levels in the province improved by 83 per cent during the same period. Regulations 346 and 350, control orders on smelting operations and the Countdown Acid Rain program have resulted in significant decreases of $SO_2$ emissions over the first three years (1991-1994) of the last decade (Figure 4.3). Over the short term, however, $SO_2$ emissions have remained about the same level since 1994. The annual mean of $SO_2$ levels over a 10-year period (1991-2000) show a decrease in the early 1990s. However, $SO_2$ levels increased in 1996 and have

remained at a more constant level through to 2000 (Figure 4.4). In 1991, the annual composite mean was 4.1 ppb in comparison to 4.4 ppb in 2000. Despite this small increase of 7.3 per cent over the 10 year period, the annual mean of $SO_2$ concentrations in 2000 has decreased 4.3 per cent since 1999.

### Lambton Industry Meteorological Alert (LIMA)

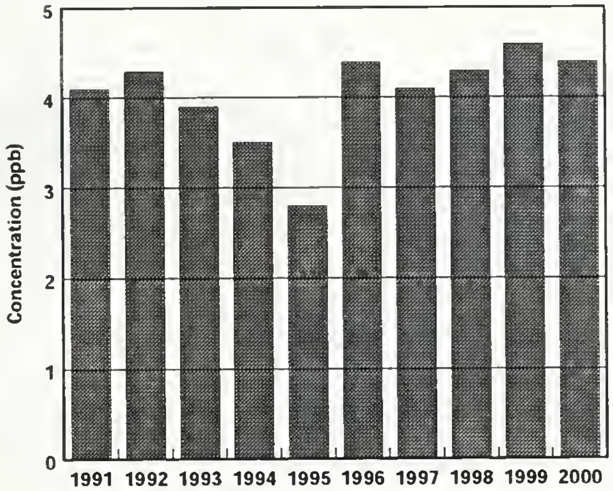
The Lambton Industry Meteorological Alert is covered by the Environmental Protection Act, Regulation 350. Application is limited to that part of the County of Lambton bounded by Lake Huron, the St. Clair River, Highway 80, Moore Township and its continuation through that part of Highway 40, and Lambton County Road 27, which includes Sarnia.

The Minister may declare an alert when the 24-hour running average $SO_2$ concentration at any station in the LIMA system reaches 70 ppb and meteorological forecasts indicate six hours or more of conditions conducive to elevated $SO_2$ concentrations. The alert is issued at 70 ppb to prevent levels from reaching the Ontario 24-hour AAQC for $SO_2$ (100 ppb).

Two monitoring sites are located in Sarnia (Front Street and Centennial Park) and one in Corunna (River Bend).

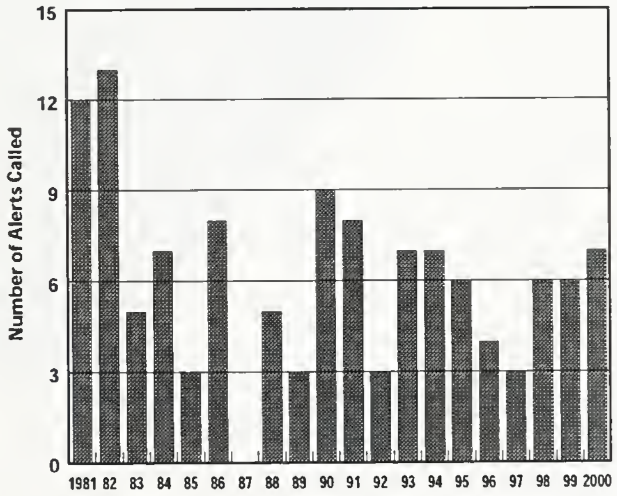
Seven alerts were issued during 2000. Three of these alerts were based on measurements from the Front Street monitor, another three from the Centennial Park monitor and one alert was based on measurements from River Bend. The highest 24-hour $SO_2$ running average (105 ppb) was recorded at Front Street and at Centennial Park during the LIMA of February 21 to February 23, and of September 20, 2000, respectively. LIMA alerts called during the past 20 years are shown in Figure 4.5. On average, there have been six alerts called per year since the inception of the program in 1981.

**Figure 4.4: Trend of Sulphur Dioxide Concentrations (1991 - 2000)**



Note: Annual composite mean based on 20 ambient sites over 10 years. Ontario Annual AAQC for sulphur dioxide is 20 ppb.

**Figure 4.5: Lambton Industry Meteorological Alert (LIMA) Summary (1981 - 2000)**

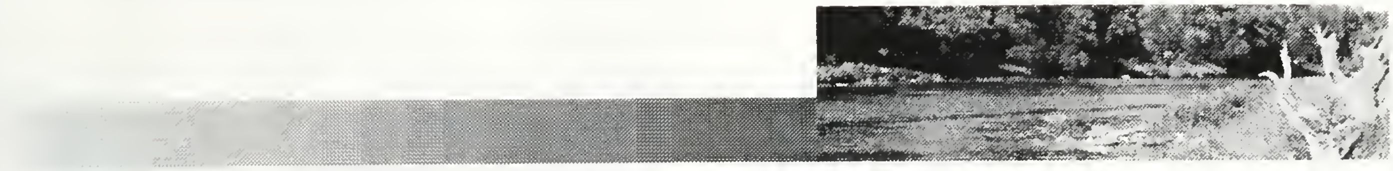


## ITROGEN DIOXIDE ($NO_2$)

### Characteristics, sources and effects

$NO_2$ is a reddish-brown gas with a pungent and irritating odour. It transforms in the air to form gaseous nitric acid and toxic organic nitrates. $NO_2$ also plays a major role in atmospheric reactions that produce ground-level ozone, a major component of smog. It is also a precursor to nitrates, which contribute to increased respirable particle levels in the atmosphere.

All combustion in air produces nitrogen oxides ($NO_x$), of which $NO_2$ is a major component. Approximately 63 per cent of $NO_x$ comes from the transportation sector in Ontario (Figure 4.6). A large part of the remaining 37 per cent comes from fossil fuel power generation, primary metal production and incineration. Natural sources of $NO_x$ include lightning and



the aerobic activity of soil bacteria.

$NO_2$ can irritate the lungs and lower resistance to respiratory infection. People with asthma and bronchitis have increased sensitivity. $NO_2$ chemically transforms into nitric acid and, when deposited, contributes to lake acidification. Nitric acid can also corrode metals, fade fabrics, degrade rubber, and damage trees and crops.

### Monitoring results for 2000

Monitoring for $NO_2$ was performed at 30 ambient locations in 2000, however, only 26 sites had sufficient data to be used in the analysis presented here. Etobicoke South recorded the highest annual mean (28.2 ppb) and the highest 24-hour concentration (64.2 ppb) during 2000, whereas Sarnia recorded the highest one-hour concentration (156.0 ppb). Typically, the highest annual $NO_2$ means are recorded in larger urban centres such as Toronto, Mississauga, and Hamilton, due to their large vehicle fleets (Figure 4.7). The one-hour criterion of 200 ppb for $NO_2$ and the 24-hour limit of 100 ppb were not exceeded during 2000.

### Trends

Provincial average ambient $NO_2$ levels have remained relatively constant over the last decade (1991-2000). Average concentrations in 2000 were 5.7 per cent lower than the levels recorded in 1991 (Figure 4.8). Provincial $NO_x$ emissions in 2000 are 8.4 per cent lower than those in 1991 (Figure 4.9). This decrease is attributed to reductions in emissions from the industrial and transportation sectors in the early 1990s. The implementation of Ontario's Drive Clean vehicle inspection program in 1999 has resulted in a decrease of $NO_x$ emissions due to the improvement in vehicle maintenance.

**Figure 4.6: Ontario Nitrogen Oxides Emissions by Sector**
(Emissions From Human Activity, 2000 Estimates)

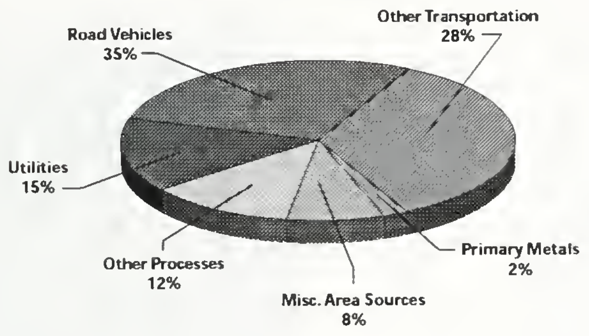
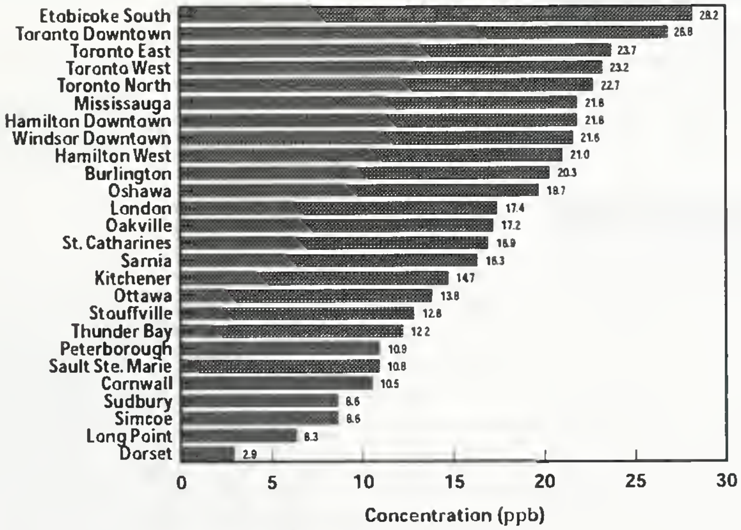


**Figure 4.7: Annual Nitrogen Dioxide Means (2000)**



Note: Data from ambient sites.

## ARBON MONOXIDE (CO)

### Characteristics, sources and effects

CO is a colourless, odourless, tasteless and at high concentrations, a poisonous gas produced primarily by incomplete burning of fossil fuels.

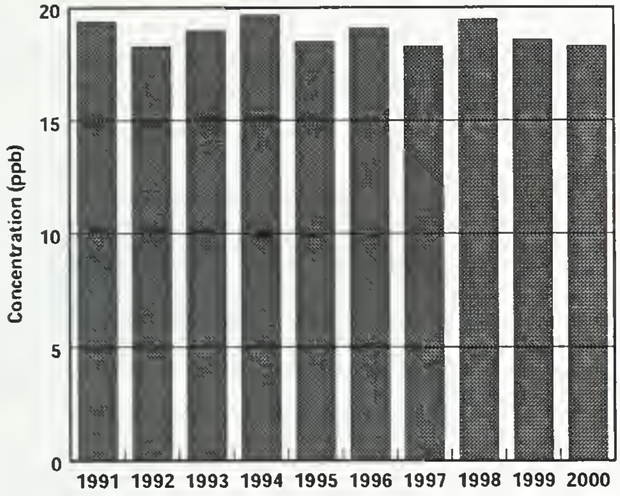
The transportation sector accounts for 65 per cent of all CO emissions from human activity in Ontario (Figure 4.10). A large part of the remaining CO emissions come from primary metal producers (24 per cent) and from fuel combustion in space heating and industrial processes (6 per cent).

CO enters the bloodstream and reduces oxygen delivery to the organs and tissues. People with heart disease are particularly sensitive. Exposure to high levels is linked with the impairment of vision, work capacity, learning ability and performance of difficult tasks.

### Monitoring results for 2000

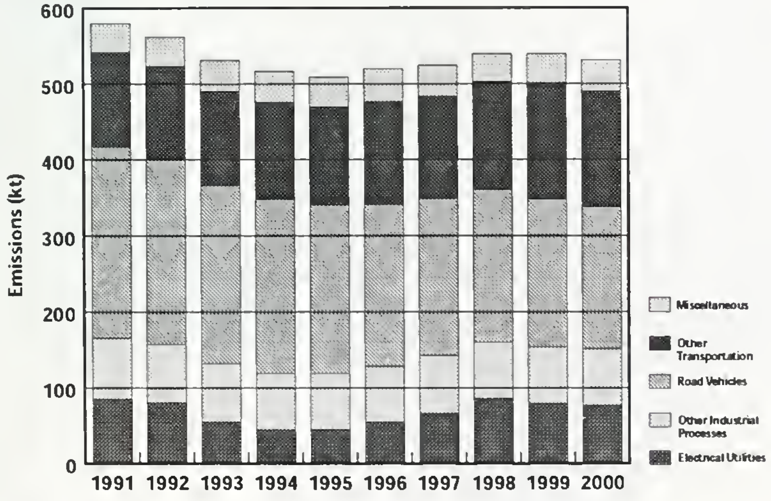
Monitoring for CO was performed at 19 ambient locations in 2000, however, only 18 sites had sufficient data to be used in the analysis presented here. The highest annual mean (1.8 ppm) was recorded at the Toronto West site.

## Figure 4.8: Trend of Nitrogen Dioxide Concentrations (1991 - 2000)



Note: Annual composite mean based on 15 ambient sites over 10 years.

## Figure 4.9: Trend of Nitrogen Oxides Emission Estimates (1991 - 2000)



The highest eight-hour measured CO value (5.0 ppm) was recorded at Mississauga while the highest one-hour concentration (11.8 ppm) was measured in downtown Windsor. Highest CO levels are recorded typically in larger urban centres as a result of vehicle emissions (Figure 4.11). The CO one-hour (30 ppm) and eight-hour (13 ppm) ambient air quality criteria have not been exceeded since 1991.

### Trends

The trends in provincial averaged one-hour and eight-hour maximum CO concentrations are shown in Figure 4.12 for the period of 1991 to 2000. Over this 10-year period, ambient CO concentrations as measured by the composite average of the one- and eight-hour maximums decreased by 39 and 33 per cent, respectively. The CO composite annual mean in 2000 is 25 per cent less than the corresponding 1991 composite mean. These reductions in ambient CO levels have occurred despite a 20 per cent increase in vehicle-kilometres travelled over the same 10-year period (Figure 4.13).

Provincial CO emissions show a small decline (4.1 per cent) between 1991 and 2000 due to the fleet change to newer vehicles with more stringent emission standards (Figure 4.14). The transportation sector accounts for 65 per cent of the provincial total CO emissions.

## OTAL REDUCED SULPHUR (TRS) COMPOUNDS

### Characteristics, sources and effects

TRS compounds produce an offensive odour similar to rotten eggs or cabbage.

Industrial sources of TRS compounds include the steel industry, pulp and paper mills, refineries and sewage treatment facilities. Natural sources include swamps, bogs and marshes.

TRS compounds are not normally considered a health hazard except at very high concentrations. They are, however, a primary cause of odours.

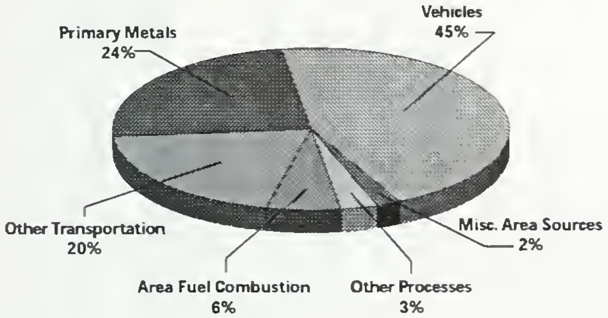
### Monitoring results for 2000

Monitoring for TRS compounds was performed at 10 ambient locations in 2000. The highest annual TRS mean (1.2 ppb) was recorded in Oakville during 2000. The maximum one-hour concentration (101 ppb) was measured at the Windsor West site where the greatest number of hours (26) above the AAQC was recorded

as well. Elevated TRS levels in Windsor are mainly attributed to transboundary impact from nearby sources in Michigan.

## Figure 4.10: Ontario Carbon Monoxide Emissions by Sector

(Emissions From Human Activity, 2000 Estimates)



### Trends

The 10-year trend in provincial composite averaged TRS levels at ambient monitoring sites is shown in Figure 4.15. An overall decreasing trend over the 10-year period is evident. Provincial mean ambient TRS levels in 2000 are 33.3 per cent lower than they were in 1991. This decrease is mainly attributed to abatement and regulatory action taken by the ministry over the years.

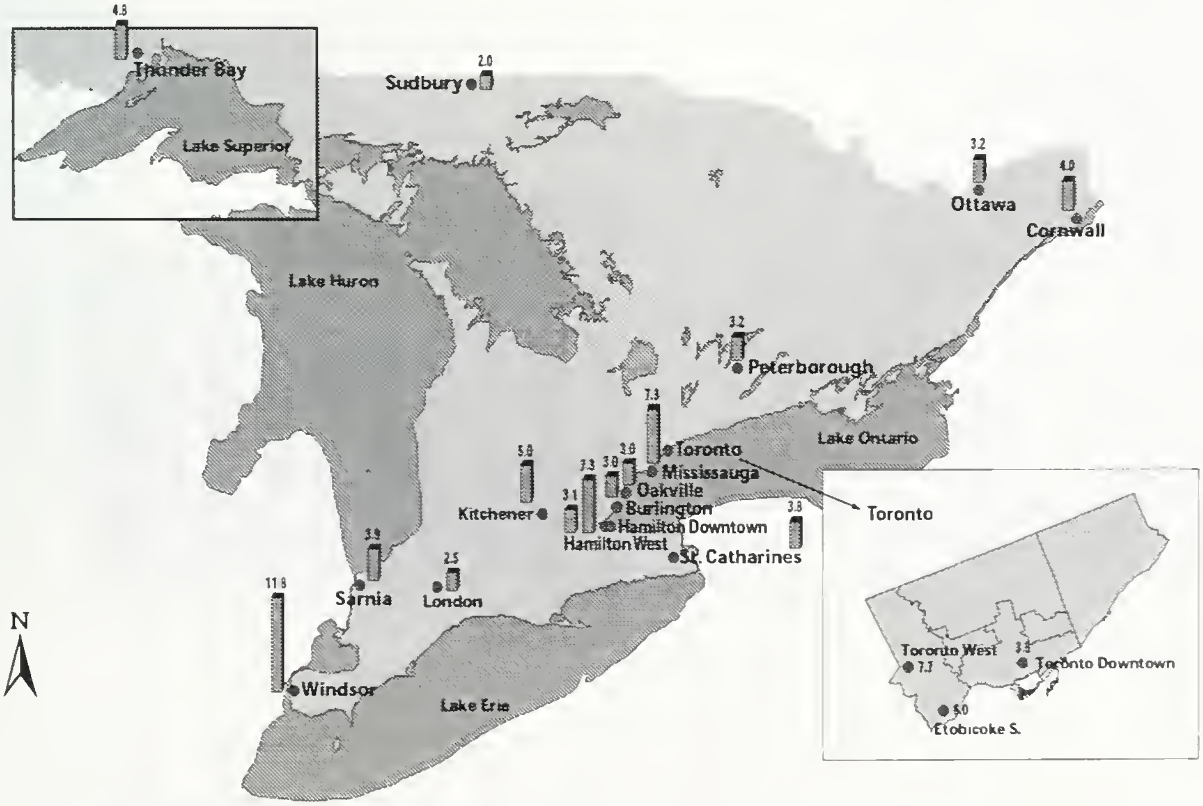
## ERCURY (Hg)

### Characteristic, sources and effects

Mercury is unique as it is the only metal that is a liquid at room temperature. It is probably best known as the silver liquid in thermometers.

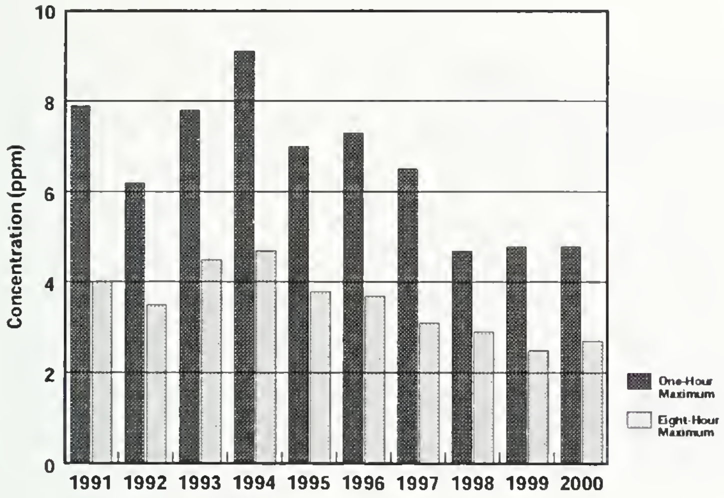
Mercury is of concern as an environmental contaminant because of its ability to accumulate in living

## Figure 4.11: Geographical Distribution of One-Hour Maximum Carbon Monoxide Concentrations Across Ontario (2000)



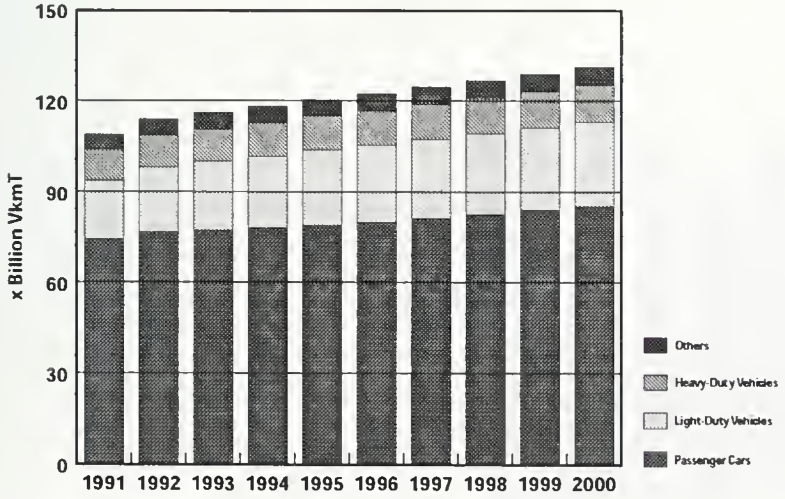
Note: One-Hour Ontario AAQC = 30 ppm.
Carbon monoxide concentrations are reported in parts per million (ppm).

Figure 4.12: Trend of Carbon Monoxide One-Hour and Eight-Hour Maximum (1991 - 2000)



Note: One-Hour Ontario AAQC = 30 ppm.
Eight-Hour Ontario AAQC = 13 ppm.

Figure 4.13: Trend of Vehicle-Kilometres Travelled (1991 - 2000)



Note: VkmT represents vehicle-kilometres travelled.

organisms, potentially reaching concentrations which could pose a hazard to health in humans and wildlife. The increase of mercury in the aquatic food chain results in relatively high levels of mercury in fish consumed by humans. Although mercury has been recognized as an environmental pollutant for decades, relatively limited monitoring for the assessment and behaviour of mercury in the atmosphere has taken place.

The sources of mercury deposition in Ontario are transboundary and natural (75%), incinerators (12.5%), thermal generating stations (2.5%), and other sources (10%). Mercury occurs naturally in the environment as mercuric sulphide. It is also present in some fossil fuels.

Potential health effects resulting from exposure to mercury include leukemia and other cancers; reproductive and developmental effects such as impaired development in newborn and young children; and damage to the pulmonary system. Effects of mercury on the aquatic ecosystem are of particular concern as levels bio-accumulate in animals at the top of the food chain resulting in exposure many times higher than directly from water or air.

## Monitoring results for 2000

Continuous air monitoring for elemental mercury is relatively new to Ontario's routine air monitoring network. Monitoring for mercury was conducted at two locations, Toronto West and Mississauga, during 2000. The maximum one-hour Hg readings at Toronto West and Mississauga were 50.4 ng/m$^3$ and 27.7 ng/m$^3$, respectively during 2000. These levels are well below the provincial one-hour guideline of 5000 ng/m$^3$. Ninety-nine per cent of the measured one-hour concentrations were less than 6 ng/m$^3$ at both sites.

During 2000, ambient annual levels of mercury were in the 2 ng/m$^3$ range at both monitoring locations. These levels are similar to measurements made at other locations in North America.

Figure 4.14: Trend of Carbon Monoxide Emission Estimates (1991 - 2000)

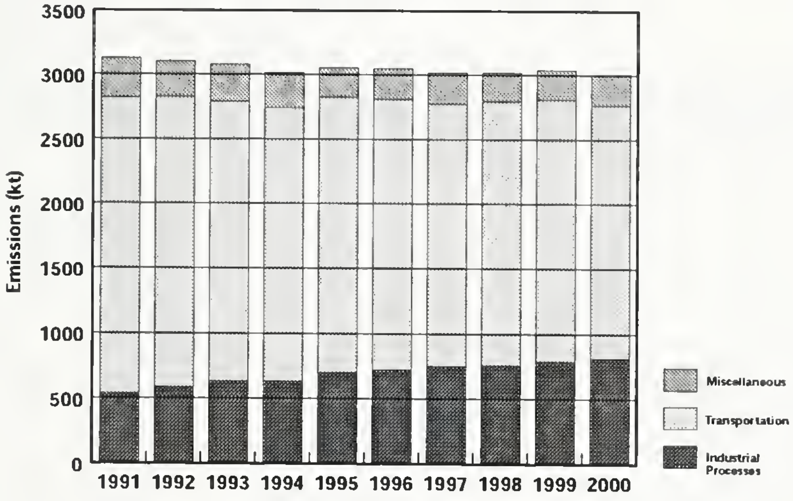
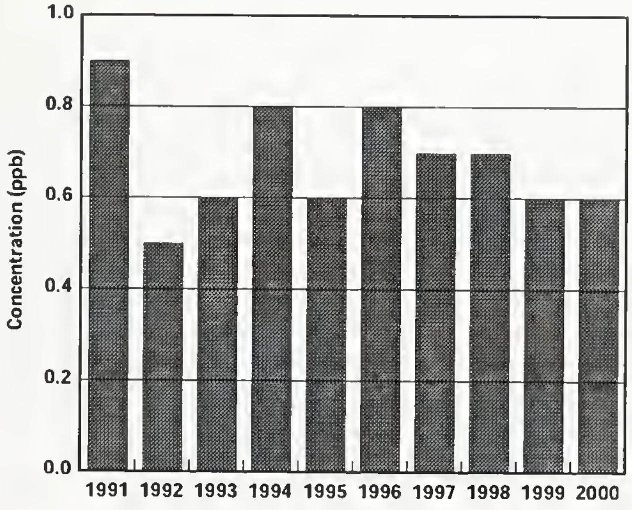
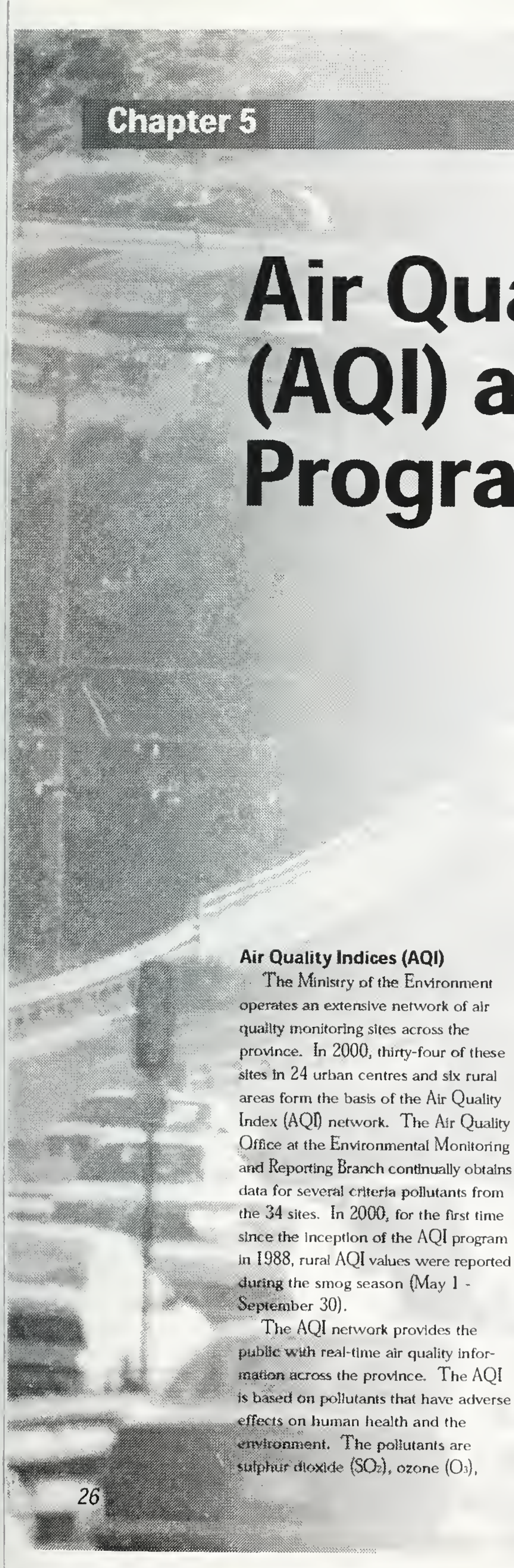


Figure 4.15: Trend of TRS Concentrations (1991 - 2000)



Note: Annual composite mean based on 10 ambient sites operated over 10 years.



## Chapter 5

# Air Quality Index (AQI) and Smog Alert Program

### Air Quality Indices (AQI)

The Ministry of the Environment operates an extensive network of air quality monitoring sites across the province. In 2000, thirty-four of these sites in 24 urban centres and six rural areas form the basis of the Air Quality Index (AQI) network. The Air Quality Office at the Environmental Monitoring and Reporting Branch continually obtains data for several criteria pollutants from the 34 sites. In 2000, for the first time since the inception of the AQI program in 1988, rural AQI values were reported during the smog season (May 1 - September 30).

The AQI network provides the public with real-time air quality information across the province. The AQI is based on pollutants that have adverse effects on human health and the environment. The pollutants are sulphur dioxide ($SO_2$), ozone ($O_3$), nitrogen dioxide ($NO_2$), total reduced sulphur (TRS) compounds, carbon monoxide (CO) and suspended particles (SP) measured as the coefficient of haze (COH). At the end of each hour, the concentration of each pollutant measured at a particular site is converted into a number that ranges from zero upwards using a common scale or index. The calculated number for each pollutant is called a sub-index.

At a given site the highest sub-index for any given hour becomes the AQI. The lower the index, the better the air quality. The index values, corresponding categories and potential health and environmental effects are shown in Table 5.1.

If the AQI value is below 32, the air quality is considered good. For AQI values in the 32-49 range (moderate category) there may be some adverse affects on very sensitive people. For index values in the 50-99 range (poor category) the air quality may have some short term adverse effects on the human or animal populations, or may cause significant damage to vegetation and property. With an AQI value of 100 or more (very poor category) the air quality may cause adverse effects for a large proportion of those exposed.

Computed air quality indices and air quality forecasts are released to the public and news media at set intervals each day. The public can access the index values by calling the ministry's automatic telephone answering device (ATAD), English recording: 1-800-387-7768 or in Toronto 416-246-0411, and French recording: 1-800-221-8852. The AQI values can also be obtained from the ministry's Web site: www.airqualityontario.com.

Air quality forecasts are provided daily based on meteorological conditions

**Table 5.1: Air Quality Index Pollutants and Their Impact**

| Index | Category | Carbon Monoxide (CO) | Nitrogen Dioxide ($NO_2$) | Ozone ($O_3$) | Sulphur Dioxide ($SO_2$) | Suspended Particles (SP) | $SO_2$ + SP (As measured by the API) | Total Reduced Sulphur (TRS) Compounds |
|---|---|---|---|---|---|---|---|---|
| 0-15 | Very good | No known harmful effects | No known harmful effects | No known harmful effects | No known harmful effects | No known harmful effects | No known harmful effects | No known harmful effects |
| 16-31 | Good | No known harmful effects | Slight odour | No known harmful effects | Damages some vegetation in combination with ozone | No known harmful effects | No known harmful effects | Slight odour |
| 32-49 | Moderate | Blood chemistry changes, but no noticeable impairment | Odour | Respiratory irritation in sensitive people during vigorous exercise; people with heart/lung disorders at some risk; damages very sensitive plants | Damages some vegetation | Some decrease in visibility | Damages vegetation (i.e. tomatoes, white beans due to sulphur dioxide) | Odour |
| 50-99 | Poor | Increased symptoms in smokers with heart disease | Air smells and looks brown. Some increase in bronchial reactivity in people with asthma | Sensitive people may experience irritation when breathing and possible lung damage when physically active; people with heart/lung disorders at greater risk; damages some plants | Odourous; increasing vegetation damage | Decreased visibility; soiling evident | Increased symptoms for people with chronic lung disease | Strong odour |
| 100-over | Very poor | Increasing symptoms in non- smokers with heart diseases; blurred vision; some clumsiness | Increasing sensitivity for people with asthma and bronchitis | Serious respiratory effects, even during light physical activity; people with heart/lung disorders at high risk; more vegetation damage | Increasing sensitivity for people with asthma and bronchitis | Increasing sensitivity for people with asthma and bronchitis | Significant effects for people with asthma and bronchitis | Severe odour; some people may experience nausea and headaches |

and short-term pollution levels in Ontario and bordering U.S. states. These forecasts are provided with the AQI report on the ATAD and can also be accessed via the ministry's Web site.

## Summary AQI levels (2000)

Table 5.2 shows the number of hourly AQI values for the 34 monitoring locations, according to the descriptive category and the pollutant responsible for the AQI above 31. Air quality was most often in the "good to very good" categories at all AQI sites across the province. Based on the cumulative total number of monitoring hours (288,351) at the 34 sites, on average, good to very good air quality was reported 95.6 per cent of the time, moderate and poor air quality 4.2 percent and 0.2 percent of the time, respectively. Three sites, Ottawa, Cornwall and North Bay, did not record any hours of poor air quality. A total of 696 hours of poor air quality were recorded in 2000, based on data from the 34 sites. The six rural AQI sites were responsible for approximately 50 per cent of the poor air quality hours recorded. This means that the 28 urban sites reported only 350 hours of poor air quality.

Figure 5.1 shows composite pie diagrams of the percentages of very good, good, moderate and poor air quality recorded at sites across the province. The pie diagram on the left shows category percentages and that on the right breaks down the poor air quality slice into percentages of pollutants associated with the AQI above 49. Poor air quality at the majority of the AQI sites was due only to ozone. This pollutant accounted for approximately 97 per cent of the number of poor air quality hours recorded during 2000 at the AQI sites. TRS accounted for approximately 3 per cent of the poor AQI values and was recorded primarily at Windsor West.

The geographical distribution of the number of days of AQI greater than 49 is shown in Figure 5.2. The highest number of poor days was recorded at Long Point (20 days), a rural AQI site. For urban sites, the Windsor West site recorded 14 days. Ten of these days, however, were due to high levels of TRS and this reflects the influence of the nearby emission sources in Michigan. In contrast, the Windsor

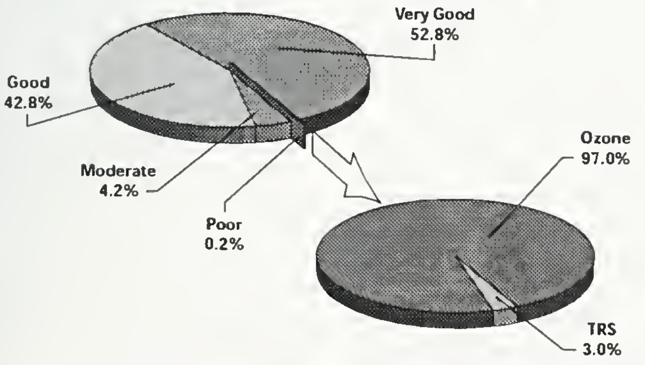
## Table 5.2: Air Quality Index Summary (2000)

| | | Number of Hours in AQI Range | | | | | | # of hours Pollutant Responsible for AQI > 31 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stn. ID | City/Town | V-Good 0-15 | Good 16-31 | Mod. 32-49 | Poor 50-99 | V-Poor 100+ | Valid hours | SP | $O_3$ | TRS | $SO_2$ | CO | $NO_2$ | # of days 1h >31 | # of days 1h >49 |
| 12008 | Windsor Downtown | 5915 | 2473 | 374 | 22 | 0 | 8784 | 0 | 396 | X | 0 | 0 | 0 | 69 | 9 |
| 12016 | Windsor West | 5948 | 2353 | 442 | 39 | 0 | 8782 | 0 | 358 | 123 | 0 | X | 0 | 94 | 14 |
| 13021 | Merlin | 4459 | 3749 | 504 | 33 | 0 | 8745 | X | 537 | X | X | X | X | 84 | 9 |
| 14064 | Sarnia | 4226 | 4008 | 433 | 15 | 0 | 8682 | 0 | 444 | 4 | 0 | 0 | 0 | 80 | 7 |
| 15020 | Grand Bend | 2461 | 5404 | 813 | 76 | 0 | 8754 | X | 889 | X | X | X | X | 113 | 17 |
| 15025 | London | 5200 | 3079 | 295 | 20 | 0 | 8594 | 0 | 315 | X | 0 | 0 | 0 | 58 | 5 |
| 18007 | Tiverton | 1917 | 6176 | 574 | 36 | 0 | 8703 | X | 610 | X | X | X | X | 77 | 8 |
| 22071 | Simcoe | 3509 | 4261 | 795 | 79 | 0 | 8644 | X | 874 | X | 0 | X | 0 | 111 | 14 |
| 22901 | Long Point | 2974 | 4676 | 961 | 105 | 0 | 8716 | X | 1066 | X | 0 | X | 0 | 122 | 20 |
| 26060 | Kitchener | 4581 | 3785 | 393 | 25 | 0 | 8784 | 2 | 416 | X | 0 | 0 | 0 | 74 | 8 |
| 27067 | Niagara Region | 5662 | 2753 | 265 | 14 | 0 | 8694 | 0 | 279 | X | 0 | 0 | 0 | 55 | 3 |
| 28028 | Guelph* | 2218 | 1714 | 223 | 11 | 0 | 4166 | X | 234 | X | X | X | X | 42 | 4 |
| 29000 | Hamilton Downtown | 5778 | 2721 | 266 | 13 | 0 | 8778 | 8 | 252 | 19 | 0 | 0 | 0 | 58 | 5 |
| 29114 | Hamilton Mountain | 4958 | 3364 | 428 | 22 | 0 | 8772 | 0 | 449 | 1 | 0 | X | 0 | 79 | 5 |
| 29118 | Hamilton West | 6014 | 2555 | 206 | 8 | 0 | 8783 | 0 | 212 | 2 | 0 | 0 | 0 | 41 | 2 |
| 31103 | Toronto Downtown | 5701 | 2595 | 290 | 12 | 0 | 8598 | X | 302 | X | 0 | 0 | 0 | 56 | 4 |
| 33003 | Toronto East | 5651 | 2703 | 295 | 11 | 0 | 8660 | X | 306 | X | X | X | 0 | 58 | 3 |
| 34020 | Toronto North | 5238 | 3265 | 231 | 8 | 0 | 8742 | X | 239 | X | X | X | 0 | 50 | 2 |
| 35003 | Toronto West | 5569 | 2811 | 361 | 24 | 0 | 8765 | X | 385 | X | 0 | 0 | 0 | 71 | 4 |
| 44008 | Burlington | 4783 | 3526 | 452 | 14 | 0 | 8775 | X | 466 | X | 0 | 0 | 0 | 89 | 2 |
| 44015 | Oakville | 5035 | 3297 | 333 | 14 | 0 | 8679 | 22 | 325 | 0 | 0 | 0 | 0 | 74 | 5 |
| 45025 | Oshawa | 4939 | 3615 | 186 | 6 | 0 | 8746 | X | 192 | X | X | X | 0 | 45 | 2 |
| 46089 | Brampton* | 3272 | 1591 | 199 | 10 | 0 | 5072 | X | 209 | X | 0 | 0 | 0 | 38 | 3 |
| 46110 | Mississauga | 5186 | 3135 | 424 | 21 | 0 | 8766 | 17 | 427 | X | 1 | 0 | 0 | 88 | 4 |
| 48002 | York Region | 3236 | 5031 | 412 | 15 | 0 | 8694 | X | 427 | X | X | X | 0 | 75 | 3 |
| 49010 | Haliburton | 2874 | 5290 | 488 | 13 | 0 | 8665 | X | 501 | X | X | X | 0 | 74 | 4 |
| 51001 | Ottawa | 5495 | 3194 | 70 | 0 | 0 | 8759 | 0 | 70 | X | 0 | 0 | 0 | 20 | 0 |
| 52020 | Kingston | 5416 | 3066 | 204 | 8 | 0 | 8694 | X | 212 | X | X | X | X | 44 | 2 |
| 56051 | Cornwall | 4209 | 4351 | 176 | 0 | 0 | 8736 | 0 | 169 | 7 | 0 | 0 | 0 | 38 | 0 |
| 59006 | Peterborough | 3154 | 5054 | 454 | 17 | 0 | 8679 | X | 471 | X | 0 | 0 | 0 | 76 | 4 |
| 63200 | Thunder Bay | 4253 | 4444 | 83 | 1 | 0 | 8781 | 0 | 65 | 19 | 0 | 0 | 0 | 22 | 1 |
| 71068 | Sault Ste. Marie | 3925 | 4605 | 221 | 1 | 0 | 8752 | 10 | 208 | 4 | 0 | X | 0 | 46 | 1 |
| 75010 | North Bay | 4521 | 4001 | 101 | 0 | 0 | 8623 | 0 | 101 | X | X | X | X | 20 | 0 |
| 77203 | Sudbury | 3787 | 4781 | 213 | 3 | 0 | 8784 | 0 | 211 | 0 | 5 | 0 | 0 | 49 | 3 |

X - Pollutant not measured

* - Station started up in summer 2000

**Figure 5.1: Air Quality Index Summary (2000)**



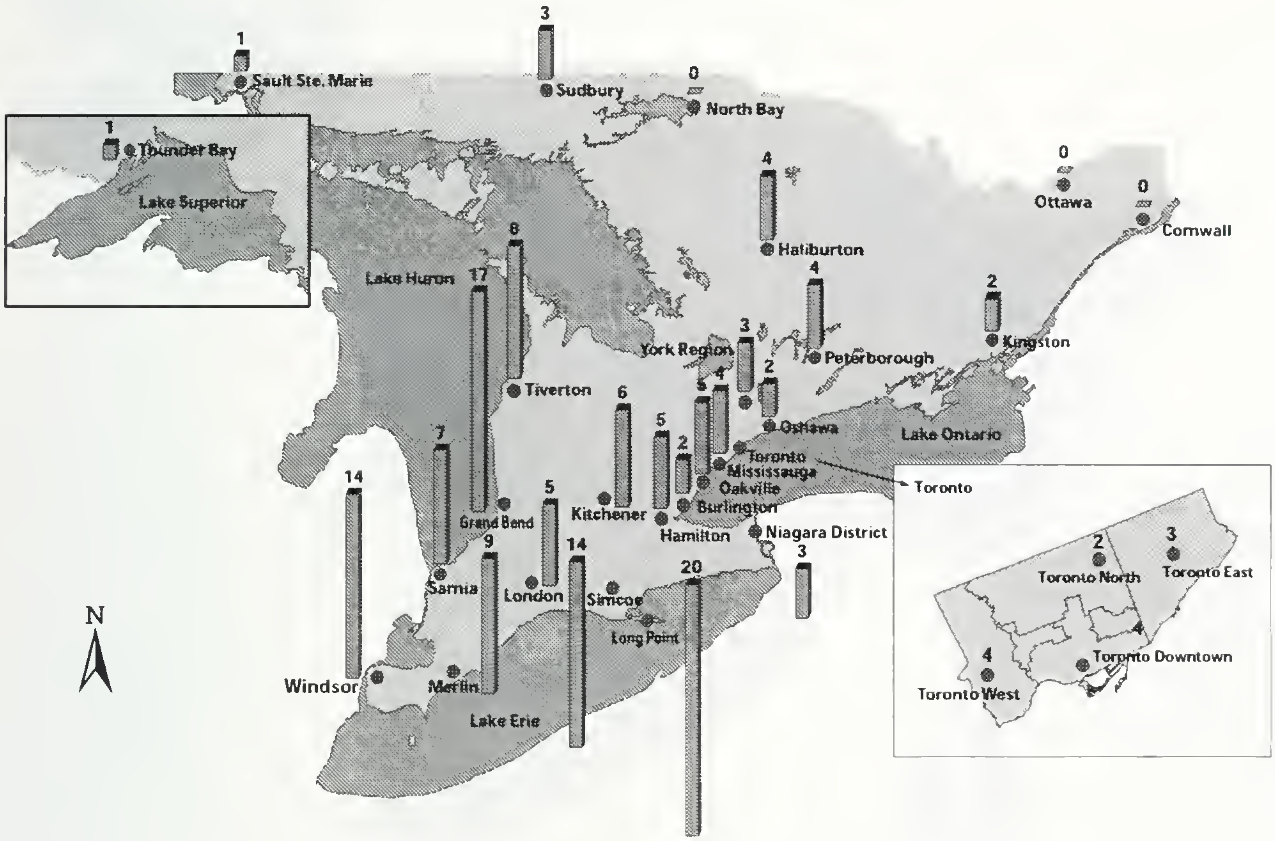
Downtown site recorded nine days all due to high levels of ozone.

Figure 5.3 shows the number of poor air quality days recorded at selected cities in Ontario for the period 1996 to 2000. The figure shows the highest number of poor air quality days was recorded in cities in the southwestern portion of the province. These cities are in closer proximity to the Ohio Valley region and the U.S. mid-west, regions from which ozone and its precursors are transported into southern Ontario. However, in all of the selected cities except Thunder Bay, the number of poor air quality days recorded in 2000 was lower than the number of poor days recorded in 1998 and 1999. At some of the cities, the number of poor air quality days in 2000 was even lower than the number of poor days recorded over the entire five-year period. Cool and wet conditions prevailed during the summer of 2000, and these conditions were not conducive to the production of high levels of ozone.

### AIR POLLUTION INDEX (API)

The air pollution index continues to be the basis of an alert and control system to warn of deteriorating air quality. It is derived from 24-hour running averages of sulphur dioxide ($SO_2$) and suspended particles (SP) as defined by a measurement known as the coefficient of haze (COH). Research

Figure 5.2: Geographical Distribution of the Number of Days AQI > 49 Across Ontario (2000)



Note: Brampton and Guelph not shown due to incomplete data sets.

studies have linked respiratory illness to high concentrations of $SO_2$ and SP.

The Ontario Environmental Protection Act (1971) authorizes the Minister of the Environment to order any point source not essential to public health or safety to curtail or cease its operations when air pollution levels which may be injurious to health occur.

If the API reaches a value of 32 (Advisory Level) and, the duty meteorologist predicts a continuation of adverse atmospheric conditions for at least six hours, an Air Pollution Advisory may be issued. Owners of significant sources of pollution are advised to prepare for possible curtailment of operation.

The First Alert Level is reached if the index reaches 50. If at least six hours of adverse atmospheric conditions are forecast, owners of major sources may be ordered to curtail operations. A second alert is issued at an API of 75 and further curtailment may be ordered.

The Air Pollution Episode Level occurs at an API of 100 and owners of all sources not essential to public safety may be ordered to cease operations if atmospheric conditions are not expected to improve for at least six hours.

### API summary (1996-2000)

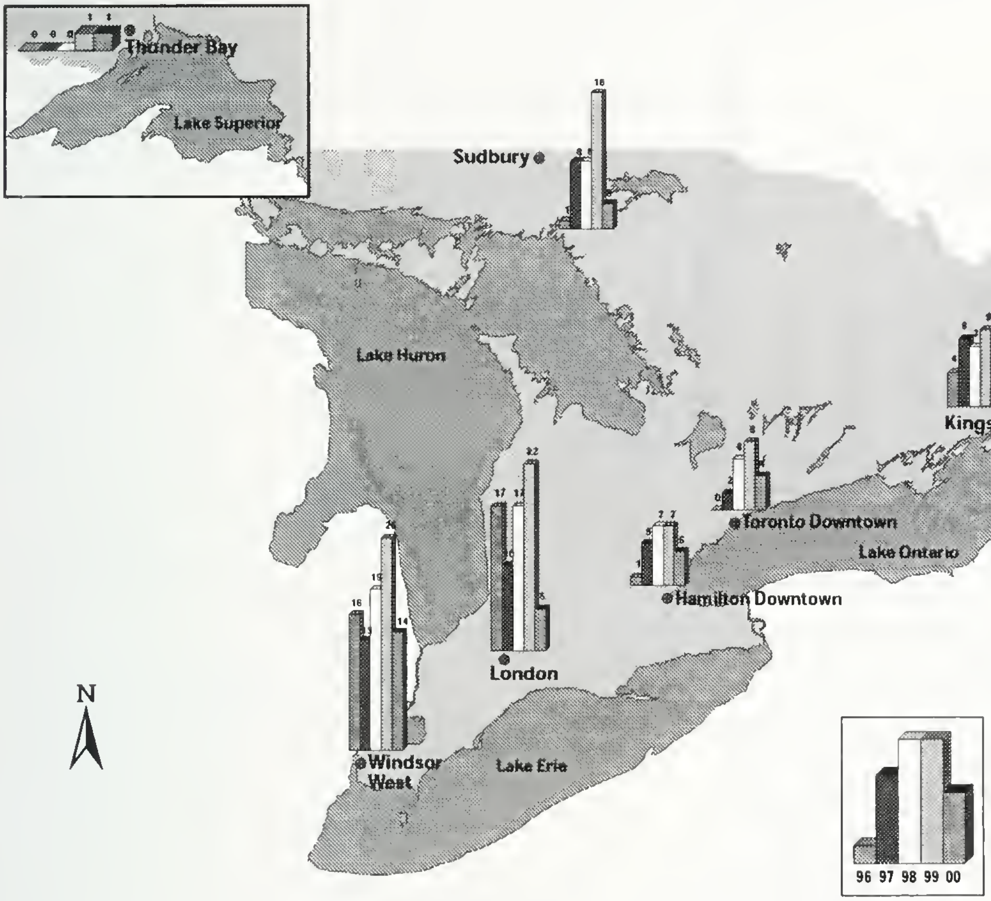
In 1996, Hamilton Downtown was the only API site that reached the advisory level of 32 and this API level occurred on only one occasion. Windsor West, the only site in 1997 that reached an API above the Advisory threshold of 32, recorded an API of 34.

For the years of 1998 to 2000 the Advisory level of 32 was not reached at any of the API sites.

### Smog Alert Program

Initiated in the late spring of 1993 as a joint effort between the Ontario Ministry of the Environment (MOE) and Environment Canada (EC), smog advisories, initially called air quality advisories, are issued to the public when widespread elevated air pollution levels due to ground-level ozone (AQI in the poor category) are forecast to occur within the next 24 hours. The smog advisory program covers southern and northeastern Ontario where ozone levels typically exceed the one-hour

**Figure 5.3: Number of Days with at Least One-Hour of AQI > 49 at Selected Cities Across Ontario (1996 - 2000)**



ambient air quality criterion (AAQC) of 80 ppb.

## Air Quality Initiative and Enhanced Smog Alert Program

On May 1st, 2000, Ontario's enhanced Smog Alert and Air Quality Index (AQI) program was implemented. This enhanced program provides Ontarians with improved reporting through comprehensive and timely air quality readings and forecasts.

## The new Air Quality Ontario Initiative includes:

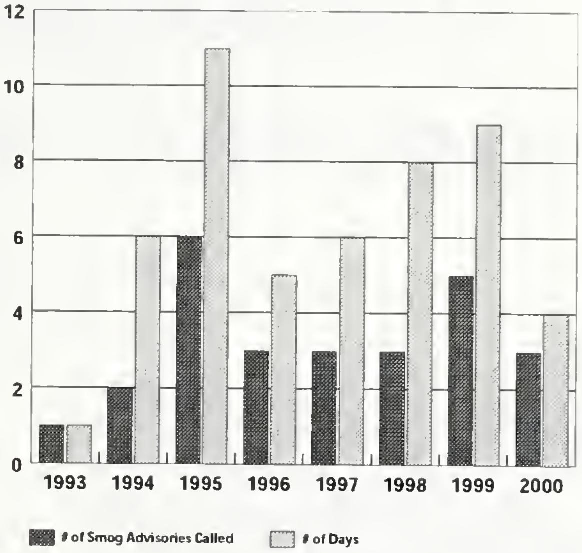
- a two-level air quality forecast that provides a three-day outlook, a smog watch, in addition to the current 24 hour smog advisory;
- A Smog Watch is called when there is a 50 per cent chance that a smog day is coming within the next three days.
- A Smog Advisory is called when there is a strong likelihood that a smog day is coming within the next 24 hours.
- If a smog day has happened without warning and weather conditions conducive to high smog are forecast to continue for at least six hours, then a smog advisory will be issued immediately.
- the public Web site, www.airqualityontario.com, where current AQI readings, smog forecasts and other air quality information are available;
- direct e-mail smog alerts for anyone who subscribes to the ministry's new smog alert network at the above website;
- increasing the number of air quality index updates from three up to six times a day, Monday to Friday, and four times per day on weekends;
- adding nine communities to the number of municipalities that report air quality data, totaling 34 air quality reporting stations in 28 communities;
- providing 1-800 numbers at which anyone at anytime can get updated information on the air quality (1-800-387-7768 in English and 1-800-221-8852 in French);
- selecting the Windsor, Essex, Chatham-Kent area as a priority area

for the initial component of the plan, since up to 90 per cent of smog over this region originates from transboundary emissions.

Six of the ten communities added to the reporting system are summer rural AQI sites (i.e., AQI values are reported from these sites only during the smog season) that provide valuable information on smog levels, particularly the role of transboundary pollution and downwind urban impacts. These rural AQI sites are Merlin, Long Point, Simcoe, Grand Bend, Tiverton and Haliburton. They are often exposed to significant transboundary pollution and elevated levels of ground-level ozone. The other four AQI sites, Brampton, York Region, Guelph and Peterborough, allow for better air quality coverage of growing populated areas of the Greater Toronto Area and surroundings.

For the 2000 smog season, Ontarians experienced the least number of smog advisory days since 1993. In 2000, nine smog watches were issued and three advisories covering four smog days. The weather in the summer of 2000 played a dominant role in the air quality. A lack of hot days (temperatures above 30°C) and steady, but near normal, amounts of precipitation resulted in a relatively low occurrence of smog days. In contrast, the hot and dry summers of the previous two years led to the issuance of eight smog advisory days in 1998, and nine such days in 1999. Figure 5.4 summarizes the number of smog advisories issued and number of smog advisory days since the inception of the program in 1993.

**Figure 5.4 Summary of Smog Advisories Called (1993 - 2000)**



## Chapter 6

# Selected Volatile Organic Compounds (VOCs)

### Characteristics, sources and effects

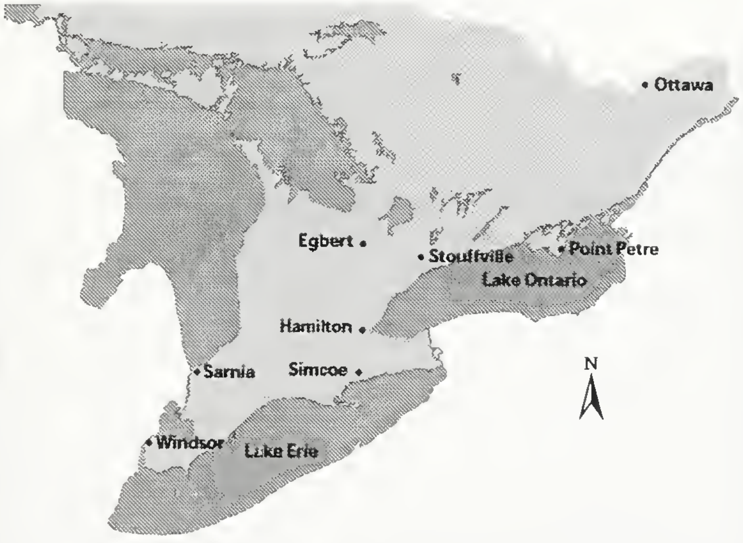
Certain volatile organic compounds (VOCs) warrant special concern because they are capable of being transported very long distances in the atmosphere and play an important role in the formation of ground-level ozone and fine particles. Almost all VOCs contribute to ground-level ozone and most do not break down in the troposphere under photochemical reactions. VOCs are defined technically as organic compounds having a saturation vapour pressure greater than $10^{-1}$ Torr at 25°C and standard atmospheric pressure.

VOCs are emitted into the atmosphere from a variety of sources, including vehicles, fossil fuel combustion, steel-making, petroleum refining, fuel-refilling, industrial and residential solvent use, paint application, manufacturing of synthetic materials (e.g. plastics, carpets), food processing, agricultural activities and wood processing and burning. Specialized, non-routine monitoring and analytical techniques are required to measure VOCs because they are usually present in the atmosphere in gaseous form at ultra-trace concentrations.

### VOC monitoring

VOC samples are collected by automatically drawing ambient air into evacuated stainless steel canisters over a 24-hour period (midnight to midnight), following the National Air Pollution Surveillance (NAPS) sampling schedule (every sixth day). Concentrations for 143 selected VOCs are reported for each sample. The list of 143 selected VOCs and their statistics appear in the separate Appendix document.

**Figure 6.1 Location of Ambient VOC Monitoring Sites (2000)**



For purposes of this report, data from 1993 to 2000 from eight ambient monitoring stations (Ottawa, Point Petre, Stouffville, Egbert, Hamilton, Simcoe, Sarnia and Windsor) are included in this discussion. The monitoring sites described in this report are displayed in Figure 6.1.

### Benzene, toluene, and ortho-xylene (BTX)

Benzene is a volatile aromatic hydrocarbon – a compound where the double-bond carbon atoms occur in a ring-type pattern – that is primarily used in the production of plastics and other chemical products. Large quantities of benzene are obtained from petroleum, either by direct extraction from certain types of crude oils or by chemical treatment of gasoline. Benzene may cause various types of leukemia, lymphoma, and blood diseases, and is classified as a human carcinogen.

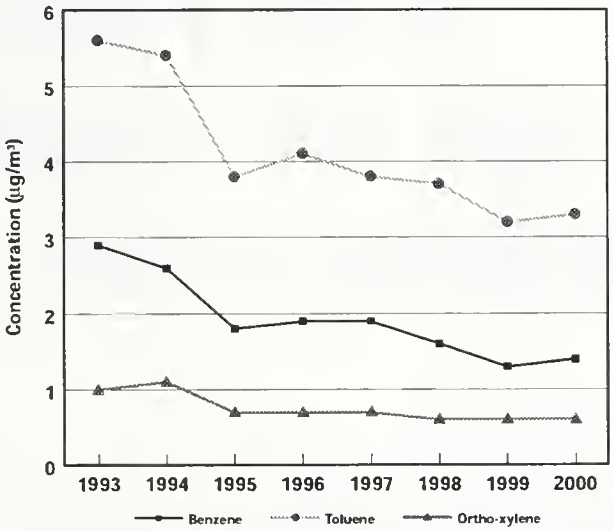
Toluene is an aromatic hydrocarbon that is used to make chemicals, explosives, dyes and many other compounds. It is used as a solvent for inks, paints, lacquers, resins, cleaners, glues and adhesives. Toluene is found in gasoline

and aviation fuel. Studies reveal that toluene does affect the central nervous system of humans and animals, however currently there is no evidence to classify it as a carcinogen.

Like benzene and toluene, ortho-xylene is an aromatic hydrocarbon. It is released directly into the atmosphere by manufacturers of motor vehicles and equipment, manufacturers of metal cans and shipping containers, and oil refining. Sources of ortho-xylene as a result of human activity include oil refining, motor vehicles, wood-burning stoves and fireplaces whereas natural sources include coal tar, oil, forest fires and plant volatiles. Although ortho-xylene does affect the central nervous system as a depressant, it has not been classified as a carcinogen due to lack of evidence.

BTX are all colourless liquids which are considered highly toxic in small concentrations and are very reactive in forming ground-level ozone and fine particles. Figure 6.2 shows trends in benzene, toluene, and ortho-xylene for the period 1993 to 2000. All three VOCs show a decreasing trend over the eight-year period. However, concentration levels for benzene and toluene increased slightly between 1999 and 2000, while ortho-xylene remained at 0.6 µg/m$^3$ since 1998.

**Figure 6.2: Trend of Benzene, Toluene and Ortho-xylene Concentrations (1993 - 2000)**



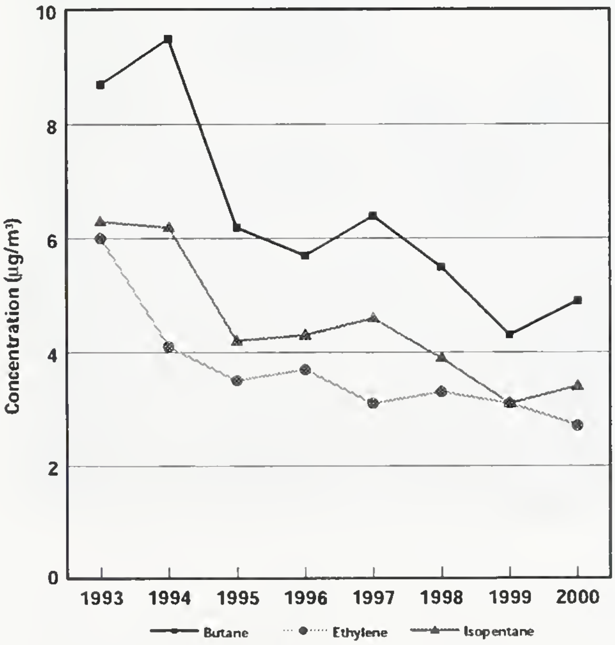
Note: Annual composite mean based on eight ambient sites over eight years.

## Butane, ethylene and isopentane

Butane and isopentane are classified as alkanes whereas ethylene is classified as an alkene. The difference between an alkane and an alkene is in their structure: alkanes are saturated hydrocarbons in which all carbon atoms form a single bond with other atoms, whereas alkenes are unsaturated hydrocarbons in which some carbon atoms form a triple bond with other carbon atoms. Butane, ethylene and isopentane are emitted primarily from automobile exhausts and by the petrochemical industry. Unlike BTX, these hydrocarbons are not as reactive in forming ozone except when present at very high concentrations.

Figure 6.3 shows trends in butane, ethylene and isopentane for the period 1993 to 2000. All three VOCs have declined since 1993, however butane and isopentane have increased slightly between 1999 and 2000.

**Figure 6.3: Trend of Butane, Ethylene and Isopentane Concentrations (1993 - 2000)**



Note: Annual composite mean based on eight ambient sites over eight years.

In general, VOC concentrations at ambient sites in Ontario are at levels well below existing ministry criteria levels.

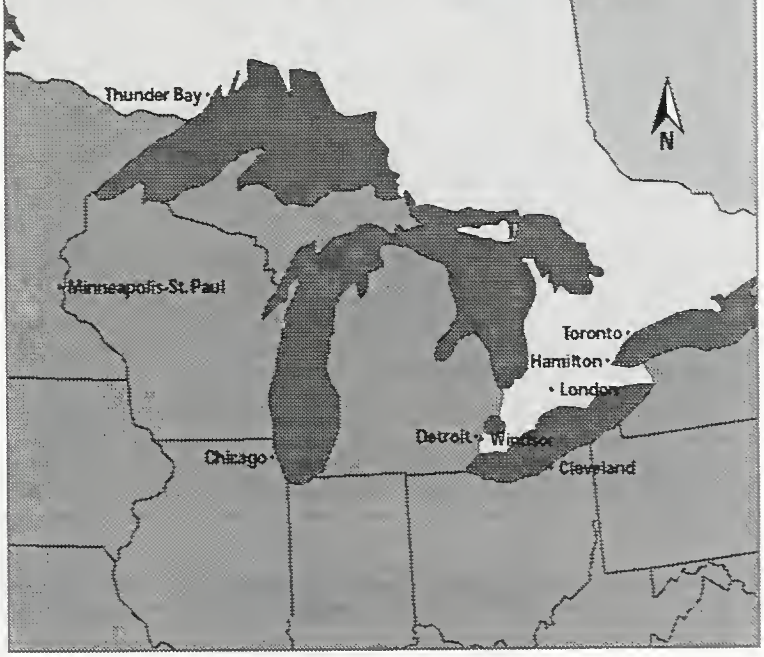
## Chapter 7

# The Great Lakes Basin Area: An Air Quality Perspective

The purpose of this section is to compare the state of air quality in selected cities within the Great Lakes Basin (GLB) area. Air quality levels for the year 2000 and for the 10-year period 1991-2000 were compared for nine cities: five in Ontario (Toronto, Hamilton, London, Windsor and Thunder Bay) and four in the U.S. (Chicago, Cleveland, Detroit, and Minneapolis-St. Paul), as displayed in Figure 7.1. The city populations ranged from 125,000 (Windsor) to 7.5 million (Chicago). The pollutants considered in the comparison were the five criteria contaminants: ozone, inhalable particles, nitrogen dioxide, carbon monoxide and sulphur dioxide.

Data were used from all available monitoring sites within the metropolitan statistical areas of each city (where applicable) to represent average city air quality. The inter-city comparisons represented here are referenced to ambient air quality criteria (AAQC) for Ontario and the national ambient air quality standards (NAAQS) for the United States.

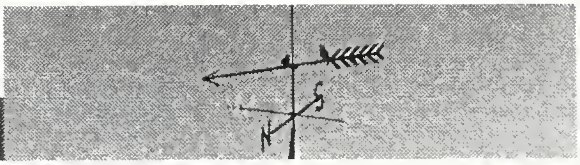
**Figure 7.1: Selected Sites in the Great Lakes Basin Area**



## ROUND-LEVEL OZONE ($O_3$)

### Monitoring results for 2000

The highest one-hour $O_3$ concentration during 2000 was recorded in Detroit (115 ppb) followed closely by London and Cleveland, each recording a maximum of 110 ppb. Thunder Bay recorded the lowest $O_3$ maximum at only 73 ppb, while Hamilton recorded the second lowest $O_3$ maximum of 93 ppb. The U.S. NAAQS (120 ppb) was not exceeded by any of the nine cities examined in the GLB area in



2000, however, eight of the cities did exceed the more restrictive Ontario one-hour AAQC (80 ppb) with the exception of Thunder Bay.

### Trends

The ten-year range (1991-2000) for one-hour maximum $O_3$ concentrations in the selected nine cities of the GLB area is shown in Figure 7.2. Windsor, due to its close proximity to the U.S. border, is at the higher end of the scale along with Detroit and Chicago. At the lower end of the scale is Thunder Bay followed by Minneapolis-St. Paul, London and Hamilton.

In addition to the year-to-year variability in meteorological factors, which are conducive to high ozone concentrations during episode events, the combination of local emissions and long-range transport of pollution from the United States greatly influence the magnitude of $O_3$ concentrations recorded in southwestern Ontario, such as those experienced in Windsor, Toronto, Hamilton and London.

**Figure 7.2 Range of Maximum One-Hour Ozone Concentrations in the Great Lakes Basin Area (1991 - 2000)**

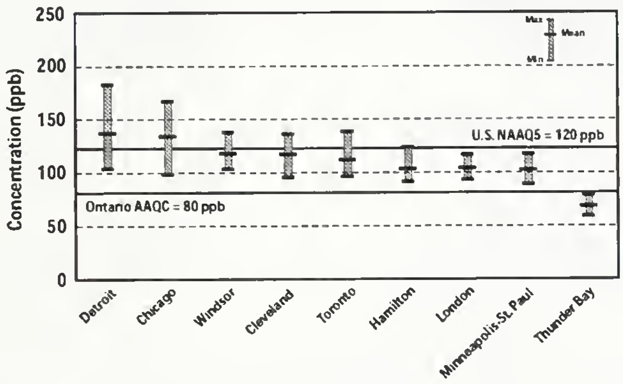
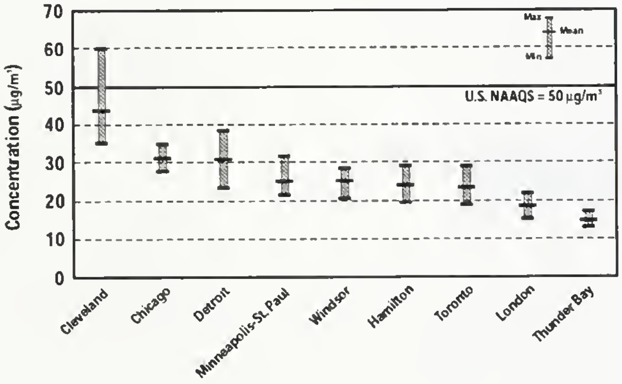


**Figure 7.3: Range of Composite Annual $PM_{10}$ Means in the Great Lakes Basin Area (1991 - 2000)**



## NHALABLE PARTICLES ($PM_{10}$)

### Monitoring results 2000

The highest composite annual $PM_{10}$ mean for 2000 was recorded in Cleveland (37.7 µg/m³), followed by Detroit (32.5 µg/m³). The U.S. NAAQS of 50 µg/m³ was not exceeded by any of the nine cities examined in the GLB area in 2000. Thunder Bay recorded the lowest composite annual mean (13.2 µg/m³). Overall, when comparing composite annual means of $PM_{10}$ during 2000, the Canadian cities recorded concentrations ranging from 13.2 µg/m³ to 24.2 µg/m³, whereas the American cities recorded levels from 25.0 µg/m³ to 37.7 µg/m³.

### Trends

The 10-year range (1991-2000) in composite annual $PM_{10}$ means for the nine selected cities in the GLB area is shown in Figure 7.3. Cleveland's levels were at the higher end of the range of composite annual means reported. As well, Cleveland was the only city that exceeded the U.S. NAAQS of 50 µg/m³ between 1991-2000. Thunder Bay reported the lowest composite annual mean over the 10-year period, followed closely by London. Similar to the composite annual means in 2000, the American cities dominated the higher end of the scale whereas the Canadian cities were at the lower end of the scale over the 10-year range.

$PM_{10}$ may be directly emitted by a source or formed in the atmosphere by the transformation of gaseous precursor emissions, such as $NO_x$ and $SO_2$. Long-range transport of these precursors from the mid-western states of the U.S. contribute to the PM levels in southwestern Ontario, as well as local emissions from human activity and natural sources.

## ITROGEN DIOXIDE ($NO_2$)

### Monitoring results for 2000

The highest composite annual $NO_2$ means for 2000 were recorded in Toronto (24 ppb) and Chicago (23 ppb). Thunder Bay recorded the lowest composite annual mean for $NO_2$ (12 ppb) in 2000 followed by London at 17 ppb. Overall, none of the nine cities exceeded the U.S. NAAQS for $NO_2$ during 2000.

**Figure 7.4: Range of Composite Annual Nitrogen Dioxide Means in the Great Lakes Basin Area (1991 - 2000)**

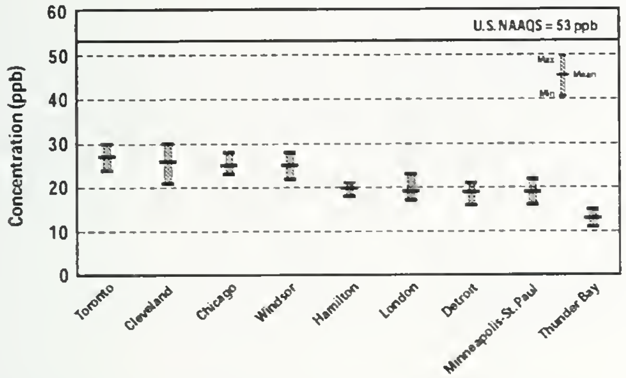
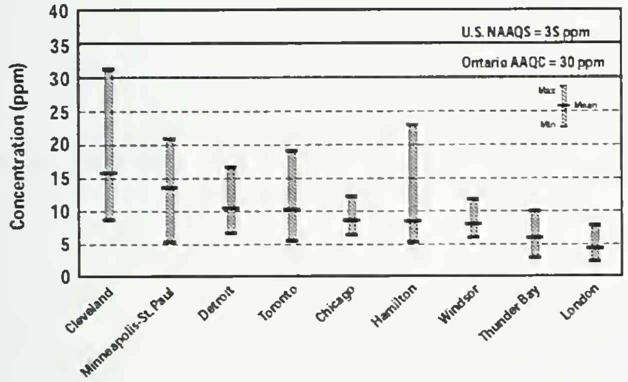


**Figure 7.5: Range of Maximum One-Hour Carbon Monoxide Concentrations in the Great Lakes Basin Area (1991 - 2000)**



### Trends

The 10-year range of composite annual $NO_2$ means for the nine cities in the GLB area is presented in Figure 7.4. Toronto, Cleveland, Chicago and Windsor share similar means at the higher end of the range, while Thunder Bay is at the lower end.

Higher levels of $NO_2$ are found in larger urban centres such as Toronto, Cleveland and Chicago because of population density and motor vehicle emissions.

## ARBON MONOXIDE (CO)

### Monitoring results for 2000

The highest one-hour CO concentrations during 2000 were recorded in Cleveland (12.8 ppm) and Windsor (11.8 ppm). Nonetheless, the levels remained well below the Ontario AAQC of 30 ppm and the U.S. NAAQS of 35 ppm. London recorded the lowest one-hour CO maximum at 2.5 ppm.

### Trends

The 10-year range (1991-2000) in maximum CO concentration for the nine cities examined in the GLB area is shown in Figure 7.5. Cleveland and Minneapolis-St. Paul were at the higher end of the scale, while Thunder Bay and London were at the lower end.

Highest CO levels are recorded typically in larger urban centres and are strongly influenced by local vehicle emissions.

## ULPHUR DIOXIDE ($SO_2$)

### Monitoring results for 2000

The highest composite annual $SO_2$ mean was recorded in Windsor (7.5 ppb), while Thunder Bay recorded the lowest composite annual mean (0.0 ppb) in 2000. All of the cities examined in the GLB area recorded levels well below the Ontario AAQC of 20 ppb and the U.S. NAAQS of 30 ppb.

### Trends

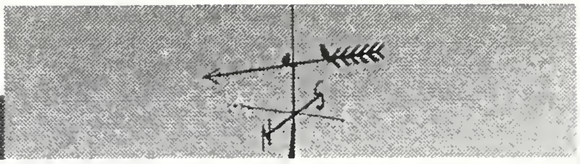
The 10-year range (1991-2000) of composite annual $SO_2$ means for the nine cities in the GLB area are displayed in Figure 7.6. Cleveland was at the higher end of the range of annual means reported with Windsor, while Thunder Bay was at the lower end.

## RANKING OF SELECTED CITIES IN THE GREAT LAKES BASIN AREA

The levels for the criteria pollutants ($O_3$, $PM_{10}$, $NO_2$, CO and $SO_2$) were examined for the 10-year period (1991-2000) in Chicago, Cleveland, Detroit, Minneapolis-St. Paul, Hamilton, London, Thunder Bay, Toronto and Windsor, and subsequently ranked accordingly in order to collectively compare the air quality within the nine selected cities.

The ranking of the cities (based on the concentration of the pollutant measured in the ambient air) ranged from 1 (representing the best air quality) to 9 (representing the poorest air quality). The rankings, based on a 10-year average, were summed up for each city resulting in a total score. The higher the total score, the worse the air quality.

The overall ranking of the nine cities in the GLB area for the criteria pollutant levels for 1991-2000 is displayed in Table 7.1. Thunder Bay placed first representing the best air quality in the region, whereas



Cleveland placed ninth recording the overall highest concentrations of the criteria pollutants examined in the area. However, the state of air quality is significantly impacted by population density, industrial base and the geographical location of the cities within the study area. These factors must be considered as they consequently influence the ranking.

**Figure 7.6: Range of Composite Annual Sulphur Dioxide Means in the Great Lakes Basin Area (1991 - 2000)**

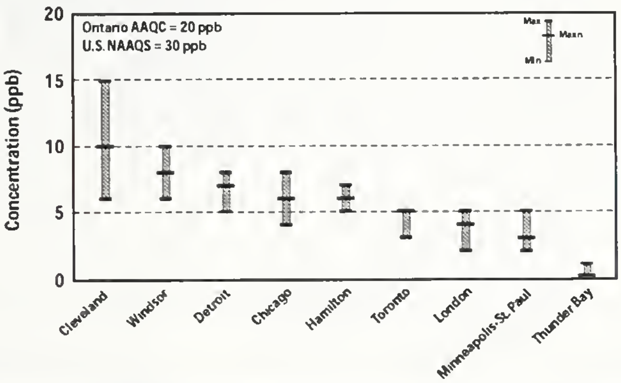


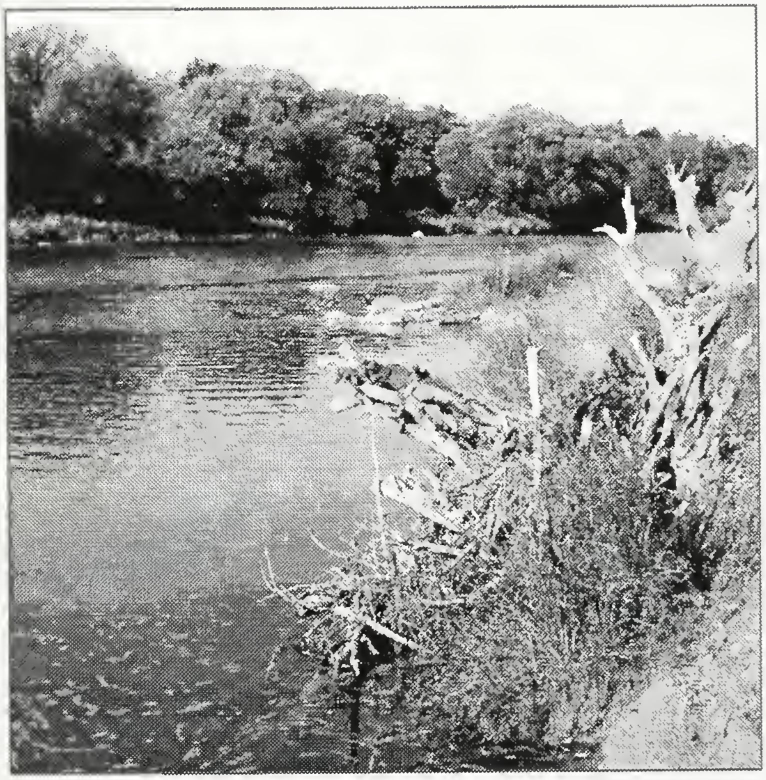
**Table 7.1: Ranking of Cities in the Great Lakes Basin Area According to Criteria Pollutant Levels (1991-2000)**

| City | $O_3$ | $PM_{10}$ | $NO_2$ | CO | $SO_2$ | Total Score | Overall Ranking |
|---|---|---|---|---|---|---|---|
| Thunder Bay | 1 | 1 | 1 | 2 | 1 | 6 | 1 |
| London | 3 | 2 | 4 | 1 | 3 | 13 | 2 |
| Minneapolis-St. Paul | 2 | 6 | 2 | 8 | 2 | 20 | 3 |
| Hamilton | 4 | 4 | 5 | 4 | 5 | 22 | 4 |
| Toronto | 5 | 3 | 9 | 6 | 4 | 27 | 5 |
| Windsor | 7 | 5 | 6 | 3 | 8 | 29 | 6 |
| Detroit | 9 | 7 | 3 | 7 | 7 | 33 | 7 |
| Chicago | 8 | 8 | 7 | 5 | 6 | 34 | 8 |
| Cleveland | 6 | 9 | 8 | 9 | 9 | 41 | 9 |

Individual rankings are summed for each city to determine a total score.

## Chapter 8

# Summary

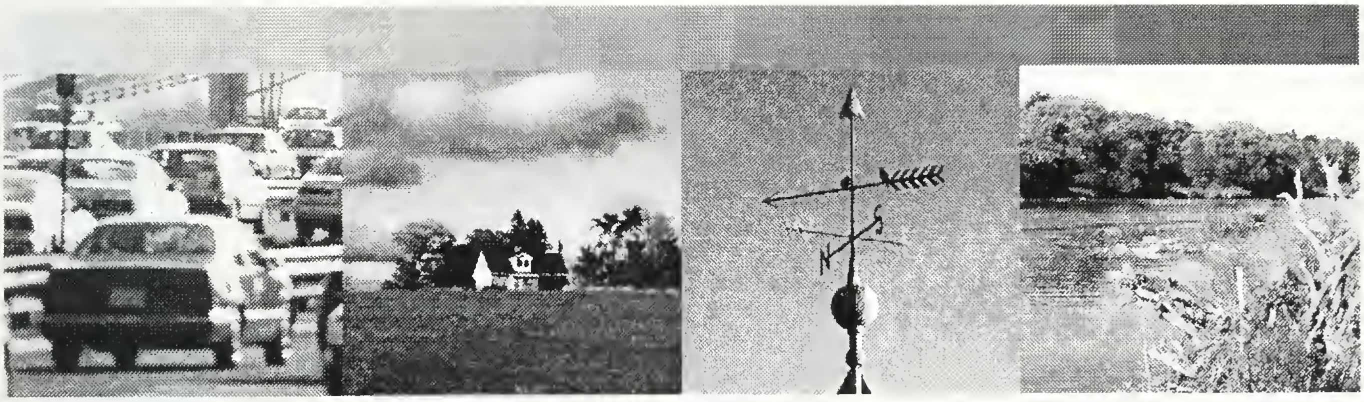


Thirty-years after the first edition of this report in 1971, there has been consistent improvement in the state of air quality in Ontario despite significant increases in population, economic activity and vehicle travel. Significant decreases have been achieved for sulphur dioxide, carbon monoxide, nitrogen dioxide, nitrogen oxides and total reduced sulphur compounds.

Encouraging as this is, there remains a great deal of work to be done. The Ontario government is directing increased emphasis on two key components of smog, namely ozone and particulate matter, which recent scientific evidence suggest have significant health effects.

Data analysis strongly indicates that neighbouring U.S. states - namely Ohio, Illinois and Michigan - are significant contributors to elevated levels of ozone and inhalable particles in southern Ontario. The contributions from long-range transport and trans-boundary movement of these pollutants need further assessment. Continued monitoring is required to evaluate trends and determine the effectiveness of reduction and abatement strategies.

Ontario has continued to review and expand its existing air monitoring network by deploying real-time monitors of inhalable and respirable particles. In 2000, there were 43 ambient $PM_{10}$/$PM_{2.5}$ monitors operating across the province. The collection and assessment of such data will allow for improvement to the reporting of important air quality information to all Ontarians.



# Glossary

| | |
|---|---|
| **Acidic deposition -** | refers to deposition of a variety of acidic pollutants (acids or acid-forming substances such as sulphates and nitrates) on biota, land or in waters of the earth's surface. |
| **Air Quality Index -** | real-time information system that provides the public with an indication of air quality in rural and urban areas across Ontario. |
| **AQI station -** | continuous monitoring station used to inform the public of air quality levels on a real-time basis; station reports on criteria pollutants. |
| **Air Pollution Index -** | basis of Ontario's alert and control system to warn of deteriorating air quality; derived from 24-hour running averages of sulphur dioxide and suspended particles. |
| **Ambient air -** | outdoor or open air. |
| **Biogenic -** | produced by living organisms. |
| **Carcinogen -** | an agent that incites carcinoma (cancer) or other malignancy. |
| **Continuous pollutant -** | contaminant for which a continuous record exists; effectively, pollutants that have hourly data (maximum 8,760 values per year except leap year – i.e. 2000 where maximum values for the year are 8,784). |
| **Continuous station -** | where pollutants are measured on a real-time basis and data determined hourly (as for example ozone, sulphur dioxide). |
| **Criterion -** | maximum concentration or level (based on potential effects) of contaminant that is desirable or considered acceptable in ambient air. |
| **Daily pollutant -** | contaminant with a 24-hour or daily value (maximum 365 values per year). |
| **Detection limit -** | minimum concentration of a contaminant that can be determined. |
| **Exceedance -** | violation of the pollutant levels permitted by environmental protection criteria. |
| **Fossil fuels -** | natural gas, petroleum, coal and any form of solid, liquid or gaseous fuel derived from such materials for the purpose of generating heat. |

# Glossary

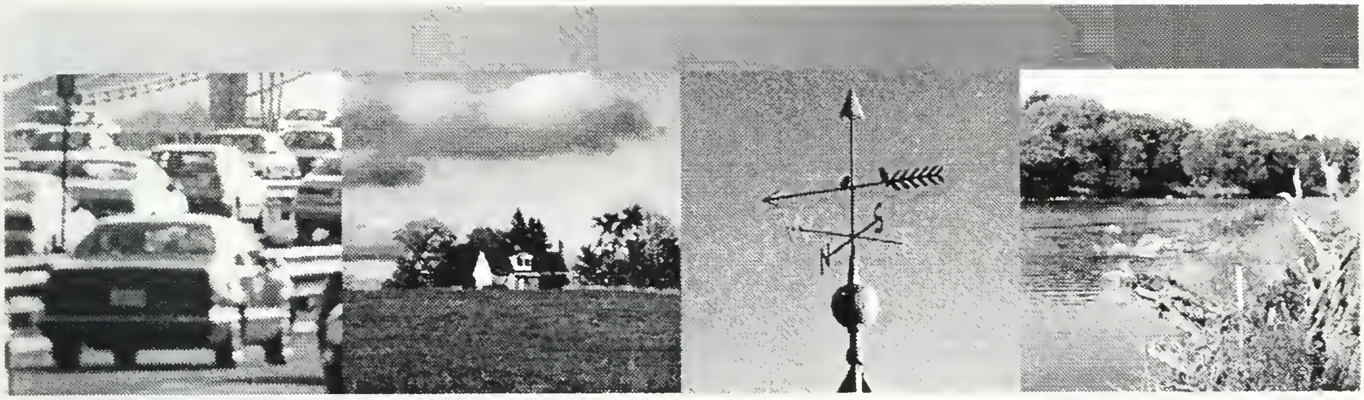
| | |
|---|---|
| **Geometric mean -** | statistic of a data set calculated by taking the $n^{th}$ root of the product of all (n) values in a data set. Provides a better indication than arithmetic mean of the central tendency for a small data set with extreme values. |
| **Global warming -** | long-term rise in the average temperature of the earth; principally due to an increase in the buildup of carbon dioxide and other gases. |
| **Ground-level ozone -** | colourless gas formed from chemical reactions between nitrogen oxides and hydrocarbons in the presence of sunlight near the earth's surface. |
| **Inhalable particles -** | represent up to 60 per cent of the total suspended particulate matter; composed of both coarse (diameter 2.6 to 10.0 microns) and fine (diameter $<$ 2.5 microns) particles; also referred to as $PM_{10}$. |
| **Micron -** | a millionth of a metre. |
| **Median -** | middle value of a set of numbers arranged in order of magnitude. |
| **Non-continuous station -** | station that measures pollutant concentration on a daily, six-day frequency or monthly cycle (as for total suspended particulate matter). |
| **Ozone episode day -** | a day on which widespread (hundreds of kilometres) elevated ozone levels (greater than 80 ppb maximum hourly concentration) occur simultaneously. |
| **Particulate matter -** | refers to all airborne finely divided solid or liquid material with an aerodynamic diameter smaller than 100 microns. |
| **Percentile value -** | percentage of the data set that lies below the stated value; if the 70 percentile value is 0.10 ppm, then 70 per cent of the data are equal to or below 0.10 ppm. |
| **Photochemical oxidant -** | air pollutants formed by the action of sunlight on oxides of nitrogen and VOCs. |
| **Photochemical reaction -** | chemical reaction influenced or initiated by light, particularly ultraviolet light. |
| **Photochemical smog -** | see smog. |
| **Primary pollutant -** | contaminant emitted directly to the atmosphere. |
| **Respirable particles -** | particles smaller than about 2.5 microns in diameter, which arise mainly from condensation of hot vapours and chemically-driven gas to particle conversion processes; also referred to as $PM_{2.5}$. These are fine enough to penetrate deeply into the lungs and have the greatest effects on health. |
| **Secondary pollutant -** | contaminant formed from other pollutants in the atmosphere. |
| **Smog -** | a contraction of smoke and fog; colloquial term used for photochemical fog, which includes ozone and other contaminants; tends to be a brownish haze. |
| **Smog advisory -** | public is advised when elevated pollution levels are forecast due to ground-level ozone. |
| **Smog day -** | day on which widespread ground-level ozone (AQI greater than or equal to 50) occurred/declared. |
| **Smog season -** | defined as the period May 1 - September 30. |

| | |
|---|---|
| **Stratosphere -** | atmosphere 10 to 40 kilometres above the earth's surface. |
| **Stratospheric ozone -** | ozone formed in the stratosphere from the conversion of oxygen molecules by solar radiation; ozone found there absorbs much ultraviolet radiation and prevents it from reaching the earth. |
| **Suspended particles -** | suspended particulate matter most likely to reach the lungs (diameter less than 25 microns). |
| **Toxic deposition -** | absorption or adsorption of a toxic pollutant at ground, vegetative or surface levels. |
| **Toxic pollutant -** | substance that can cause cancer, genetic mutations, organ damage, changes to the nervous system, or even physiological harm as a result of prolonged exposure, even at relatively small amounts. |
| **Troposphere -** | atmospheric layer extending about 10 kilometres above the earth's surface. |

## Chapter 8

# Abbreviations

| | |
|---|---|
| **AAQC -** | Ambient Air Quality Criteria (Ontario) |
| **API -** | Air Pollution Index |
| **AQI -** | Air Quality Index |
| **AQUIS -** | Air Quality Information System |
| **CO -** | carbon monoxide |
| **$CO_2$ -** | carbon dioxide |
| **COH -** | coefficient of haze reported as SP |
| **CWS -** | Canada-Wide Standard |
| **EC -** | Environment Canada |
| **EMRB -** | Environmental Monitoring and Reporting Branch |
| **EST -** | Eastern Standard Time |
| **GLB-** | Great Lakes Basin |
| **$H_2S$ -** | hydrogen sulphide |
| **INS -** | insufficient data to calculate statistic |
| **IP -** | inhalable particles |
| **LIMA -** | Lambton Industry Meteorological Alert |
| **MOE -** | Ministry of the Environment |
| **NAAQS -** | National Ambient Air Quality Standard (U.S.) |
| **NAPS -** | National Air Pollution Surveillance |
| **NO -** | nitric oxide |
| **$NO_2$ -** | nitrogen dioxide |
| **$NO_x$ -** | nitrogen oxides |
| **$O_3$ -** | ozone |
| **$PM_{2.5}$ -** | particles less than 2.5 microns |
| **$PM_{10}$ -** | particles less than 10 microns |
| **RP -** | respirable particles |
| **$SO_2$ -** | sulphur dioxide |
| **$SO_x$ -** | sulphur oxides |
| **SP -** | suspended particles |
| **TEOM -** | Tapered Element Oscillating Microbalance |
| **TRS -** | total reduced sulphur |
| **TSP -** | total suspended particles |
| **US EPA -** | United States Environmental Protection Agency |
| **VOCs -** | volatile organic compounds |
| **kg -** | kilogram |
| **kt -** | kilotonne |
| **$ng/m^3$ -** | nanograms (of contaminant) per cubic metre (of air) |
| **$\mu g/m^3$ -** | micrograms (of contaminant) per cubic metre (of air) |
| **ppb -** | parts (of contaminant) per billion (parts of air) |
| **ppm -** | parts (of contaminant) per million (parts of air) |



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# Air Quality in Ontario 2000

## Appendix

Ministry of Environment
and Energy

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This report has been prepared by the staff of the Environmental Monitoring and Reporting Branch of the Ontario Ministry of Environment and Energy. The staff of the regional offices of the Operations Division and Laboratory Services Branch of the Environmental Sciences and Standards Division are acknowledged for providing a portion of the air quality data reported herein. Canada's National Air Pollution Surveillance program is also acknowledged for providing air toxics data.

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## INTRODUCTION

This appendix is intended for use in conjunction with the annual report, Air Quality in Ontario 2000. The first part of the Appendix briefly describes the provincial air monitoring network, the quality assurance and quality control procedures and data base. The second part of the Appendix provides a series of tables showing the station locations as well as a listing of the summary statistics including, means, maxima, percentile values and the number of exceedances of the Ontario criteria for each pollutant.

## MONITORING NETWORK OPERATIONS

### Network Description

In 1971, the provincial air monitoring network consisted of 254 instruments: 166 continuous analyzers at 76 monitoring sites and 88 sites with high-volume samplers. By 1980, the provincial network had reached its maximum size at 450 instruments, of which 268 were continuous analyzers at 106 sites and 182 high-volume samplers. During 2000, the network consisted of 197 continuous monitoring instruments at 78 sites, 47 high-volume samplers, 26 daily $PM_{10}$ samplers and 31 real-time $PM_{10/2.5}$ monitors.

More than 50 per cent of all air monitoring by the ministry is source-specific and is the principal responsibility of the ministry's Operations Division. For the most part, the operation of the monitoring stations and the collection of air samples is conducted by the regional staff. Environmental Monitoring and Reporting Branch operates the Greater Toronto Area (ambient stations) network and the mobile air monitoring units. The monitoring networks are classified by their functions: continuous air monitoring stations; non-continuous sampling sites; the meteorological network; and mobile air monitoring.

Ministry regional boundaries along with the locations of air monitoring sites of the continuous, noncontinuous and meteorological network are shown in Maps 1 to 3.

### Quality Assurance and Quality Control

In 2000, each region had an atmospheric and terrestrial effects unit responsible for the day-to-day air monitoring and maintenance.

Each day, the instruments are checked through a computerized telephone link by technicians confirming the automatic zero and span values (that is, a known value for a particular gas).

Regional technicians inspect and maintain the monitoring equipment and stations continually. If an instrument undergoes major servicing, the instrumentation and quality assurance unit will re-calibrate it.

Portable calibration equipment is used by regional staff. This equipment itself is re-calibrated at least twice per year.

There are other monitoring programs, such as those operated by the Lambton Industrial Society, Environment Canada and Ontario Power Generation, which the ministry either audits or conducts comparisons with. The ministry uses data from these services to judge provincial air quality.

The environmental monitoring and reporting branch operates a laboratory with gas reference standards that adhere to those of the U.S. National Institute of Standards and Technology (NIST), as well as to the pollution measurement division of Environment Canada.

Performance audits are conducted on the sulphur dioxide, nitrogen oxides/nitrogen dioxide, ozone and total reduced sulphur (as hydrogen sulphide) monitors approximately three times per year. Performance audits are conducted twice a year for $PM_{10/2.5}$ monitors and once a year on carbon monoxide monitors.

Chemical analyses performed by the Laboratory Services Branch are also subject to quality assurance and control.

The ambient air quality monitoring network undergoes constant maintenance to ensure a high standard of quality control.

Continuous real-time and particulate data are reviewed, assessed and validated constantly by regional staff and staff of the Environmental Monitoring and Reporting Branch.

Actions are taken immediately to correct anything that may affect the validity of the data.

These measures ensure that ambient air monitoring data are valid, complete, comparable, representative and accurate.

In 2000, continuous air monitoring instruments were given 586 performance audits. Approximately 78.7 per cent of the audits were found to be in the acceptable performance criterion; i.e. measured values were within 10 per cent of the standard. For the remaining 21.3 per cent, which fell outside the 10 per cent range, station log records and backup charts were consulted to adjust the data to reflect true ambient concentrations. As a result, the network for 2000 had 93.5 per cent valid data out of approximately four million data points.

**Data Base**

The ambient air quality data used in this report are stored in the ministry's air quality information system (AQUIS). Approximately 4 million air pollution measurements are added to AQUIS yearly, with the vast majority representing Ontario's more heavily populated urban areas.

A statistical pattern test is used to identify data anomalies, such as unusual pollutant concentrations. Each pollutant has a predetermined pollutant concentration range based on historical data. Values outside this range are flagged for further investigation.

AQUIS data are divided into two major groupings: continuous (1-hour) measurements and daily (24-hour) measurements.

Hourly data are obtained from automated ambient air monitoring instruments that operate continuously. These produce an average measurement each hour for a possible total of 8,760 measurements in a year.

$SO_2$, SP (as COH), CO, $NO_x/NO/NO_2$, $O_3$, $PM_{10}/PM_{2.5}$, Hg and TRS compounds are all measured hourly. A valid annual mean requires at least 5,840 hourly readings or 67 per cent valid data. Typically the network yields approximately 95 per cent valid data.

The instruments that provide daily measurements from a 24-hour sampling period are usually operated on one, three or six-day sampling cycles. They measure TSP, $PM_{10}$, lead, various trace metals, sulphate and nitrate.

For daily data, a valid annual mean requires at least two-thirds of the total number of possible samples. For example, a station operating on a six-day sampling schedule would require at least 40 out of a possible 61 samples.

To be included in the 10-year trend analysis, a site must have valid annual means for at least eight out of the 10 years 1991-2000.

## NETWORK DESCRIPTIVE TABLES AND ANNUAL STATISTICS

The entire continuous (hourly) network is summarized in Table 1 and Map 1. The table displays the station name, numerical identifier, and pollutants measured. The numerical identifier is the station (ID) number, the first digit of which identifies the geographic region in which the station is located.

The column headings for the continuous pollutants are as follows:

| | |
|---|---|
| $SO_2$ | (sulphur dioxide) |
| COH | (suspended particles as measured by the Coefficient of Haze) |
| CO | (carbon monoxide) |
| $O_3$ | (ozone) |
| NO | (nitric oxide) |
| $NO_2$ | (nitrogen dioxide) |
| $NO_x$ | (oxides of nitrogen) |
| $PM_{10}/PM_{2.5}$ | (real-time inhalable/respirable particles) |
| TRS | (total reduced sulphur compounds) |
| Hg | (mercury) |
| AQI | (air quality index) |

The particulate (daily) network is summarized in Table 2 and Map 2. The table displays the station name, numerical identifier, and pollutants measured. Numerals indicate the monitoring cycle frequency in days. The column headings for the noncontinuous pollutants are as follows:

| | |
|---|---|
| TSP | (total suspended particles) |
| Cd | (cadmium in TSP) |
| Cr | (chromium in TSP) |
| Cu | (copper in TSP) |
| Fe | (iron in TSP) |
| Mn | (manganese in TSP) |
| Ni | (nickel in TSP) |
| Pb | (lead in TSP) |
| V | (vanadium in TSP) |
| $NO_3^-$ | (nitrate in TSP) |
| $SO_4^{2-}$ | (sulphate in TSP) |
| $Cl^-$ | (chlorine in TSP) |
| C | (carbon in TSP) |

The inhalable particle ($PM_{10}$) network is summarized in Table 3 and incorporated into Map 2. This table displays the station location, parameters measured and frequency of sampling.

The meteorological network is summarized in Table 4 and Map 3. This table displays the station name, numerical identifier, meteorological parameters measured and the height of the measurements.

The 2000 statistical data for the various pollutants are provided in Tables 5 through 30. The 10-year trends are presented in Tables 31 to 38. The stations used in the 10-year trends are listed in Table 39.

## ABBREVIATIONS

ID -five digit provincial station identification number
TYPE -survey type (ambient or source specific)
YR. -year monitoring began
LAT. -station latitude in degrees:minutes
LONG. -station longitude in degrees:minutes
ELEV. -elevation of air sampling inlet (metres above ground)
INS. -insufficient data to compute relevant statistics

## Table 1: Ontario Continuous Air Monitoring Network for 2000

| CITY | STATION NAME | ID | TYPE | YR. | LAT. | LONG. | ELEV. | $SO_2$ | COH | CO | $O_3$ | NO/NO$_2$ NO$_X$ | PM$_{10}$ | PM$_{2.5}$ | TRS | Hg | AQI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WINDSOR | WRIGHT/WATER ST. | 12007 | I | 84 | 42:17 | 83:06 | 4 | T | . | . | . | . | . | . | T |  | . |
| WINDSOR DOWNTOWN | 467 UNIVERSITY AVE. W. | 12008 | A | 69 | 42:19 | 83:03 | 8 | T | T | T | T | T | . | . | . | . | T |
| WINDSOR | TECUMSEH WATER TREATMENT PLANT | 12009 | I | 98 | 42:20 | 82:55 | 4 | T | . | . | . | T | . | T | . | . | . |
| WINDSOR WEST | COLLEGE/SOUTH ST. | 12016 | A | 75 | 42:18 | 83:04 | 4 | T | T | . | T | T | T | . | T | . | T |
| MERLIN | MIDDLE RD., MOE WATER PUMP STN. | 13021 | A | 77 | 42:15 | 82:13 | 4 | . | . | . | T | . | . | . | . | . | * |
| | | | | | | | | | | | | | | | | | |
| COURTRIGHT | HWY 40 (OPPOSITE OPG) | 14016 | I | 69 | 42:48 | 82:29 | 4 | T | . | . | . | . | . | . | . | . | . |
| SARNIA | FRONT ST./CN TRACKS, CENTENNIAL PARK | 14064 | A | 76 | 42:59 | 82:24 | 3 | T | T | T | T | T | T | T | T | . | T |
| MANDAUMIN | CONCESSION RD. 26 | 14118 | A | 77 | 42:56 | 82:14 | 4 | . | . | . | T | . | . | . | . | . | . |
| LONGWOODS | LONGWOODS CONSERVATION AUTHORITY | 15009 | A | 83 | 42:53 | 81:29 | 4 | . | . | . | T | . | . | . |  |  |  |
| PARKHILL | PUC BUILDING | 15013 | A | 83 | 43:10 | 81:41 | 5 | . | . | . | T | . | . | . | . | . | . |
| | | | | | | | | | | | | | | | | | |
| GRAND BEND | HWY 21/COUNTY RD. 83 | 15020 | A | 91 | 43:20 | 81:44 | 4 | . | . | . | T | . |  | . | . | . | * |
| LONDON | 900 HIGHBURY AVE. | 15025 | A | 95 | 42:58 | 81:12 | 4 | T | T | T | T | T | T | . | . | . | T |
| TIVERTON | LOT C/CONCESSION 5, VISITOR INFO CTR. | 18007 | A | 79 | 44:18 | 81:35 | 4 | . | . | . | T | . | . | T | . | . | * |
| SIMCOE | HWY 3/BLUE LINE RD. | 22071 | A | 75 | 42:51 | 80:16 | 4 | T | . | . | T | T | . | T | . | . | T |
| NANTICOKE | CHEAPSIDE RD. (3 KM S. HWY 3) | 22086 | I | 77 | 42:52 | 80:00 | 5 | T | . | . | . | T | . | . | . | . | . |
| | | | | | | | | | | | | | | | | | |
| LONG POINT | PROVINCIAL PARK | 22901 | A | 79 | 42:35 | 80:23 | 4 | T | . | . | T | T |  | . | . |  | * |
| NANTICOKE | SANDUSK RD., WALPOLE S. P.S. | 22904 | I | 79 | 42:50 | 80:02 | 4 | T | . | . | . | . | . | . | T |  |  |
| NANTICOKE | NANTICOKE VILLAGE | 22907 | I | 84 | 42:49 | 80:05 | 4 | T | T | . | . | . | . | . | T |  | . |
| KITCHENER | WEST AVE./HOMEWOOD | 26060 | A | 90 | 43:26 | 80:30 | 5 | T | T | T | T | T | . | T | . | . | T |
| ELMIRA | UNION/PARK | 26070 | I | 99 | 43:35 | 80:30 | 4 | T | . | . | . | . | . | . | T | . | . |
| | | | | | | | | | | | | | | | | | |
| NIAGARA REGION | ARGYLE CRES., PUMP STN. | 27067 | A | 87 | 43:10 | 79:14 | 4 | T | T | T | T | T | . | T | . | . | T |
| GUELPH | EXHIBITION/CLARK ST. | 28028 | A | 00 | 43:33 | 80:16 | 4 | . | . | . | T | . | . | T | . | . | T |
| HAMILTON DOWNTOWN | ELGIN/KELLY | 29000 | A | 87 | 43:15 | 79:52 | 4 | T | T | T | T | T | . | T | T | . | T |
| HAMILTON | BARTON/SANFORD | 29025 | I | 69 | 43:16 | 79:51 | 4 | T | T | . | . | . | . | . | T | . |  |
| HAMILTON | 467 BEACH BLVD. | 29102 | I | 84 | 43:17 | 79:47 | 4 | T | T | . | . | T | . | . | T | . | . |

## Table 1: Ontario Continuous Air Monitoring Network for 2000

| CITY | STATION NAME | ID | TYPE | YR. | LAT. | LONG. | ELEV. | $SO_2$ | COH | CO | $O_3$ | NO/$NO_2$ $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | TRS | Hg | AQI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HAMILTON MOUNTAIN | VICKERS RD./E. 18TH ST. | 29114 | A | 85 | 43:14 | 79:52 | 3 | T | T | . | T | T | . | T | T | . | T |
| HAMILTON WEST | MAIN ST. W./ HWY 403 | 29118 | A | 85 | 43:15 | 79:54 | 3 | T | T | T | T | T | . | . | T | . | T |
| HAMILTON | PIER 25/BEACH STRIP | 29547 | I | 92 | 43:16 | 79:46 | 4 | . | T | . | . | . | . | . | T | . | . |
| HAMILTON | HOMESIDE II | 29565 | I | 00 | 43:14 | 79:47 | 4 | . | T | . | . | . | T | . | . | . | . |
| HAMILTON | NIAGARA/LAND ST. | 29567 | I | 00 | 43:29 | 79:55 | 3 | . | T | . | . | . | T | . | T | . | . |
| TORONTO DOWNTOWN | BAY/WELLESLEY | 31103 | A | 97 | 43:39 | 79:23 | 3 | T | . | T | T | T | . | T | . | . | T |
| TORONTO | CN TOWER | 31190 | A | 89 | 43:35 | 79:23 | 444 | . | . | . | T | T | . | . | . | . | . |
| TORONTO EAST | KENNEDY/LAWRENCE | 33003 | A | 70 | 43:45 | 79:16 | 4 | . | . | . | T | T | T | . | . | . | T |
| TORONTO NORTH | YONGE ST./FINCH AVE. | 34020 | A | 88 | 43:47 | 79:25 | 5 | . | . | . | T | T | . | T | . | . | T |
| TORONTO WEST | ELMCREST RD., CENTENNIAL PARK | 35003 | A | 69 | 43:39 | 79:35 | 5 | T | . | T | T | T | T | . | . | T | T |
| ETOBICOKE | EVANS/ARNOLD AVE. | 35033 | A | 67 | 43:37 | 79:31 | 5 | T | T | T | T | T | T | T | . | . | . |
| YORK | CLEARVIEW HEIGHTS | 36030 | I | 88 | 43:42 | 79:29 | 5 | T | T | T | T | T | . | . |  | . | . |
| BURLINGTON | HWY 2/NORTH SHORE BLVD. E. | 44008 | A | 79 | 43:19 | 79:48 | 5 | T | . | T | T | T | T | . | . | . | T |
| OAKVILLE | BRONTE RD./WOBURN CRES. | 44015 | A | 80 | 43:24 | 79:44 | 5 | T | T | T | T | T | . | . | T | . | T |
| OSHAWA | RITSON RD./OLIVE AVE., RITSON RD. P.S. | 45025 | A | 79 | 43:53 | 78:51 | 5 | . | . | . | T | T | . | T | . | . | T |
| BRAMPTON | 525 MAIN ST. N., PEEL MANOR | 46089 | A | 00 | 43:42 | 79:47 | 5 | T | . | T | T | T | . | T | . | . | T |
| MISSISSAUGA | QUEENSWAY W./HURONTARIO ST. | 46110 | A | 77 | 43:34 | 79:37 | 5 | T | T | T | T | T | . | T | . | T | T |
| GEORGIAN BAY SOUTH | 1385 RIVER RD. E. | 47005 | A | 00 | 44:31 | 80:01 | 3 | . | . | . | T | . | . | . | . | . | . |
| YORK REGION | HWY 47/E. HWY 48 | 48002 | A | 74 | 43:58 | 79:16 | 5 | . | . | . | T | T | T | . | . | . | T |
| HALIBURTON | HWY 117/PAINT LAKE RD. | 49010 | A | 81 | 45:13 | 78:56 | 3 | . | . | . | T | T | . | T | . | . | * |
| OTTAWA | RIDEAU/WURTENBURG ST. | 51001 | A | 71 | 45:26 | 75:41 | 4 | T | . | T | T | T | . | T | . | . | T |
| KINGSTON | 133 DALTON AVE. | 52020 | A | 88 | 44:14 | 76:31 | 5 | . | . | . | T | . | . | . | . | . | T |
| CORNWALL | BEDFORD/THIRD ST. S., MEMORIAL PARK | 56051 | A | 70 | 45:01 | 74:44 | 4 | T | T | T | T | T | . | . | T | . | T |
| PETERBOROUGH | 10 HOSPITAL DR. | 59006 | A | 98 | 44:18 | 78:21 | 7 | T | . | T | T | T | T | . | . | . | T |
| DRYDEN | 35 VAN HORNE AVE. | 61027 | I | 84 | 49:47 | 92:50 | 15 | . | . | . | . | . | . | . | T | . | . |

## Table 1: Ontario Continuous Air Monitoring Network for 2000

| CITY | STATION NAME | ID | TYPE | YR. | LAT. | LONG. | ELEV. | $SO_2$ | COH | CO | $O_3$ | $NO/NO_2$ $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | TRS | Hg | AQI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FORT FRANCES | PORTAGE/CHURCH ST. | 62030 | I | 76 | 48:37 | 93:24 | 4 | . | . | . | . | . | . | . | T | . | . |
| FORT FRANCES | COLONIZATION RD. W., CEMETERY | 62032 | I | 76 | 48:37 | 93:25 | 5 | . | . | . | . | . | . | . | T | . | . |
| FORT FRANCES | EIGHTH ST./CORNWALL AVE. | 62047 | I | 90 | 48:37 | 93:24 | 4 | . | . | . | . | . | . | . | T | . | . |
| FORT FRANCES | ARMIT AVE./4TH ST., ROBERT MOORE P.S. | 62200 | I | 97 | 48:38 | 93:23 | 3 |  | T |  | T |  | . |  | T | . | . |
| MARATHON | PETER ST. | 63033 | I | 91 | 48:43 | 86:23 | 4 | . | . | . | . | . | . | . | T | . | . |
| THUNDER BAY | MONTREAL ST., BOMBARDIER | 63046 | I | 76 | 48:21 | 89:18 | 3 | . | . | . | . | . | . | . | T | . | . |
| RED ROCK | BROMPTON RD., RECREATION CTR. | 63084 | I | 81 | 48:57 | 88:15 | 7 | . | . | . | . | . | . | . | T | . | . |
| TERRACE BAY | SELKIRK ST., ST. MARTIN SCHOOL | 63090 | I | 81 | 48:47 | 87:06 | 8 | . | . | . | . | . | . | . | T | . | . |
| TERRACE BAY | TERRACE HEIGHT DR. | 63092 | I | 94 | 48.48 | 87:04 | 4 | . | . | . | . | . | . | . | T | . | . |
| THUNDER BAY | 615 JAMES ST. S., MTO | 63200 | A | 86 | 48:23 | 89:17 | 3 | T | T | T | T | T | . | . | T | . | T |
| THUNDER BAY | VICTOR ST. | 63202 | I | 00 | 48:20 | 89:20 | 3 | . | . | . | . | . | . | . | T | . | . |
| THUNDER BAY | MARY ST. | 63204 | I | 00 | 48:22 | 89:16 | 8 | . | . | . | . | . | . | . | T | . | . |
| SAULT STE. MARIE | BONNEY ST., PUMPHOUSE | 71042 | I | 99 | 46:31 | 84:23 | 3 | . | . | . | . | . | . | T | . | . | . |
| SAULT STE. MARIE | PATRICK ST., WM. MERRIFIELD SCHOOL | 71068 | A | 87 | 46:32 | 84:21 | 3 | T | T | . | T | T | T |  | T | . | T |
| SMOOTH ROCK FALLS | 54 SECOND AVE. | 72115 | I | 98 | 49:17 | 81:37 | 3 | . | . | . | . | . | . | . | T | . |  |
| NORTH BAY | CHIPPEWA ST., DEPT. NATIONAL DEFENCE | 75010 | A | 79 | 46:19 | 79:27 | 4 | . | T | . | T | . | . | T | . | . | T |
| SUDBURY | SKEAD | 77012 | I | 52 | 46:39 | 80:46 | 4 | T | . | . | . | . | . | . | . | . | . |
| SUDBURY | HANMER | 77013 | I | 73 | 46:39 | 80:57 | 5 | T | . | . | . | . | . | . | . | . | . |
| SUDBURY | ASH ST., WATER TANK | 77016 | I | 69 | 46:30 | 81:00 | 3 | T | . | . | . | . | . | . | . | . | . |
| CONISTON | GOVERNMENT RD./EDWARD ST. | 77028 | I | 74 | 46:29 | 80:51 | 4 | T | . | . | . | . | . | . | . | . | . |
| GARSON | FALCONBRIDGE RD. | 77065 | I | 76 | 46:34 | 80:51 | 4 | T | . | . | . | . | . | . | . | . | . |
| NEW SUDBURY | KENNEDY ST. | 77075 | I | 76 | 46:31 | 80:57 | 4 | T | . | . | . | . | . | . | . | . | . |
| SUDBURY | MIKKOLA, J. HAMILTON SCHOOL | 77201 | I | 82 | 46:25 | 81:07 | 4 | T | . | . | . | . | . | . | . | . | . |
| SUDBURY | 100 RAMSEY LAKE RD., SCIENCE NORTH | 77203 | A | 84 | 46:28 | 80:59 | 15 | T | T | T | T | T | . | . | T | . | T |
| RAYSIDE | ST. LAURENT/REGIONAL RD. | 77206 | I | 85 | 46:36 | 81:06 | 4 | T | . | . | . | . | . | . | . | . |  |

## Table 1: Ontario Continuous Air Monitoring Network for 2000

| CITY | STATION NAME | ID | TYPE | YR. | LAT. | LONG. | ELEV. | $SO_2$ | COH | CO | $O_3$ | $NO/NO_2$ $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | TRS | Hg | AQI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COPPER CLIFF | MARKET ST. | 77218 | I | 87 | 46:28 | 81:04 | 4 | T | . | . | . | . | . | . | . | . | . |
| SUDBURY | ROBINSON SCHOOL | 77225 | I | 90 | 46:28 | 81:00 | 4 | T | . | . | . | . | . | . | . | . | . |
| SUDBURY | DOZZI PARK | 77228 | I | 93 | 46:28 | 81:02 | 4 | T | . | . | . | . | . |  | . | . | . |
| **TOTALS:** |  |  |  |  |  |  |  | **45** | **25** | **20** | **42** | **34** | **12** | **19** | **31** | **2** | **34** |

**RECENT CHANGES TO THE 2000 CONTINUOUS AIR MONITORING NETWORK:**

Stations added to the network: Guelph (28028); Hamilton (29565 and 29567); Brampton (46089); Georgian Bay South (47005); Thunder Bay (63202 and 63204); and Smooth Rock Falls (72115).

Stations removed from the network: Hamilton (29531); Mississauga (46117); International Falls (62045); and Sudbury (77096).

**LEGEND:**

ID - Station identification number
TYPE - A: ambient survey; I: source specific survey
YR. - Year station monitoring began
LAT. - Latitude (degrees:minutes)
LONG. - Longitude (degrees:minutes)
ELEV. - Air intake height above ground (m)
T - Telemetry
* - Seasonal AQI site (May 1 - September 30 only)

$SO_2$ - Sulphur Dioxide
COH - Coefficient of Haze
CO - Carbon Monoxide
$O_3$ - Ozone

NO - Nitric Oxide
$NO_2$ - Nitrogen Dioxide
$NO_x$ - Oxides of Nitrogen
$PM_{10}$ - Inhalable Particulate

$PM_{2.5}$ - Respirable Particulate
TRS - Total Reduced Sulphur
Hg - Mercury
AQI - Air Quality Index

## Table 2: Ontario Noncontinuous Air Monitoring Network for 2000

| CITY | STATION NAME | ID | TYPE | YR. | LAT. | LONG. | ELEV. | TSP | Cd | Cr | Cu | Fe | Mn | Ni | Pb | V | $NO_3^-$ | $SO_4^{2-}$ | Cl | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ST. MARYS | 309 THOMAS ST. | 11001 | 1 | 79 | 43:15 | 81:09 | 3 | 6 |  | . | . | . | . | . | . | . | . | . | . | . |
| WINDSOR | WRIGHT/WATER ST. | 12007 | 1 | 84 | 42:17 | 83:06 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |  |
| WINDSOR DOWNTOWN | 467 UNIVERSITY AVE. W. | 12008 | A | 70 | 42:19 | 83:03 | 8 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . |
| WINDSOR | DROUILLARD RD./RICHMOND ST. | 12011 | 1 | 88 | 42:19 | 83:00 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | . |
| WINDSOR | 3665 WYANDOTTE ST. E., FILTRATION PLANT | 12013 | 1 | 71 | 42:19 | 83:00 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | . |
| WINDSOR WEST | COLLEGE/SOUTH ST. | 12016 | A | 75 | 42:18 | 83:04 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . |
| WINDSOR | 2885 HOWARD AVE. | 12038 | 1 | 78 | 42:17 | 83:01 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . |
| WINDSOR | COLUMBUS CTR. | 12058 | 1 | 93 | 42:17 | 83:01 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . |
| WINDSOR | CITY YARD | 12061 | 1 | 95 | 42:18 | 83:02 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |  |  |  |  |
| COURTRIGHT | HWY 40 (OPPOSITE OPG) | 14016 | 1 | 69 | 42:48 | 82:29 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |  |
| CORUNNA | R.R. 1 (W. OF HOUSE) | 14030 | 1 | 78 | 42:53 | 82:17 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | . |
| LONDON | 900 HIGHBURY AVE. | 15025 | A | 96 | 42:58 | 81:12 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |  |  |  |  |
| BEACHVILLE | CYANAMIDE RD., GORDON PROP. | 17014 | 1 | 74 | 43:05 | 80:50 | 2 | 6 | . | . | . | . | . | . | . | . | . | . |  |  |
| BEACHVILLE | 26 VINE ST., MOE TRAILER | 17015 | 1 | 89 | 43:05 | 80:50 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| INGERSOLL | HWY 2/R.R. 2, J. SPRIEL PROP. | 17020 | 1 | 81 | 43:04 | 81:49 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| EMBRO | OXFORD CITY RD. 6, HESSTON FARM | 17021 | 1 | 83 | 43:06 | 81:58 | 1 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| BEACHVILLE | 26 VINE ST., MOE TRAILER | 17215 | 1 | 89 | 43:04 | 80:50 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| BEACHVILLE | 26 VINE ST., MOE TRAILER | 17315 | 1 | 89 | 43:04 | 80:50 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| NANTICOKE | RAINHAM RD./SANDUSK RD. | 22092 | 1 | 85 | 42:49 | 80:02 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | 6 |
| NANTICOKE | SANDUSK RD., WALPOLE S. P.S. | 22904 | 1 | 84 | 42:50 | 80:02 | 4 | 6 | . | . | . | . | . | . | . | . | 6 | 6 | 6 | . |
| NANTICOKE | RAINHAM RD. (NEAR STELCO GATE) | 22907 | 1 | 84 | 42:49 | 80:05 | 4 | 6 | . | . | . | . | . | . | . | . | . |  |  | 6 |
| NANTICOKE | N. 2 KM NANTICOKE OPG | 22964 | 1 | 84 | 42:50 | 80:05 | 4 | 6 | . | . | . | . | . | . | . | . |  |  |  |  |
| THOROLD | 185 QUEEN ST. S. | 27052 | 1 | 82 | 43:07 | 79.12 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . |  |  |  |
| ST. CATHARINES | 27 PLYMOUTH AVE. | 27057 | 1 | 98 | 43:06 | 79:05 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . |  |  |  |
| THOROLD | BEAVERDAMS/COLLIER | 27081 | 1 | 99 | 43:06 | 79:12 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |  |  |  | . |

## Table 2: Ontario Noncontinuous Air Monitoring Network for 2000

| CITY | STATION NAME | ID | TYPE | YR. | LAT. | LONG. | ELEV. | TSP | Cd | Cr | Cu | Fe | Mn | Ni | Pb | V | $NO_3^-$ | $SO_4^{2-}$ | $Cl^-$ | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NIAGARA FALLS | 7401 PORTAGE RD. | 27082 | I | 99 | 43.04 | 79:04 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | . |
| HAMILTON DOWNTOWN | ELGIN/KELLY | 29000 | A | 88 | 43:15 | 79:52 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON | KENILWORTH | 29009 | I | 69 | 43:15 | 79:49 | 6 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON | BURLINGTON/LEEDS | 29011 | I | 73 | 43:16 | 79:49 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON | BURLINGTON/WELLINGTON | 29012 | I | 73 | 43:16 | 79:59 | 7 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON | BARTON/SANFORD | 29025 | I | 69 | 43:16 | 79:51 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON | 467 BEACH BLVD. | 29102 | I | 85 | 43:17 | 79:47 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON | GERTRUDE/DEPEW | 29113 | I | 86 | 43:15 | 79:49 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON MOUNTAIN | VICKERS RD./EAST 18TH ST. | 29114 | A | 85 | 43:14 | 79:52 | 3 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON WEST | MAIN ST. W./HWY 403 | 29118 | A | 85 | 43:15 | 79:54 | 3 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON | MORLEY ST./PARKDALE AVE. | 29119 | I | 86 | 43:15 | 79:47 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON | DUNDURN/YORK | 29122 | I | 87 | 43:16 | 79:53 | 10 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| HAMILTON | KEEFER COURT, MOE LAB | 29143 | I | 92 | 43:24 | 79:45 | 4 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| TORONTO | 51 LARCHMOUNT AVE., BRUCE P.S. | 31045 | I | 86 | 43:40 | 79:20 | 6 | 1 | . | . | . | . | . | . | 1 | . | . | . | . | . |
| TORONTO | MOSLEY/LESLIE ST. S. | 31058 | I | 73 | 43:40 | 79:20 | 5 | 1 | . | . | . | . | . | . | 1 | . | . | . | . | . |
| TORONTO | 633 EASTERN AVE., A.R.CLARKE CO. | 31065 | I | 87 | 43:40 | 79:20 | 12 | 1 | . | . | . | . | . | . | 1 | . | . | . | . | . |
| TORONTO | 138 HAMILTON AVE., WORKS DEPT. | 31082 | I | 74 | 43:40 | 79:21 | 5 | 1 | . | . | . | . | . | . | 1 | . | . | . | . | . |
| BURLINGTON | 3900 MAINWAY BLVD. | 44009 | I | 99 | 43:21 | 79:48 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | . |
| MISSISSAUGA | 2360 DIXIE RD. | 46047 | I | 95 | 43:36 | 79:35 | 1 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| MISSISSAUGA | APPLE LANE, MEADOW PARK | 46117 | I | 87 | 43:31 | 79:36 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | . |
| THUNDER BAY | MONTREAL ST., BOMBARDIER | 63046 | I | 78 | 48:21 | 89:18 | 3 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| SAULT STE. MARIE | BONNEY ST., PUMPHOUSE | 71042 | I | 75 | 46:31 | 84:23 | 2 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | . | . | . | 6 |
| HEARST | GEORGE ST./6TH ST. | 72114 | I | 97 | 49:41 | 83:39 | 2 | 6 | . | . | . | . | . | . | . | . | . | . | . | . |
| **TOTALS:** | | | | | | | | **48** | **22** | **22** | **22** | **22** | **22** | **22** | **26** | **22** | **11** | **11** | **11** | **7** |

**RECENT CHANGES TO THE 2000 NONCONTINUOUS AIR MONITORING NETWORK:**

Stations removed from the network: Elmira (26054 and 26056); Cambridge (26062 and 26064); Welland (27045); and Markham (48003).

Stations resumed monitoring in 2000: Nanticoke (22092); and Toronto (31058).

**LEGEND:**

| | |
|---|---|
| SINGLE DIGITS | - Cycle duration in days |
| ID | - Station identification number |
| TYPE | - A: ambient survey; I: source specific survey |
| YR. | - Year station began monitoring |
| LAT. | - Latitude (degrees:minutes) |
| LONG. | - Longitude (degrees:minutes) |
| ELEV. | - Air intake height above ground (m) |

| | | | |
|---|---|---|---|
| TSP | - Total Suspended Particulate | Pb | - Lead |
| Cd | - Cadmium | V | - Vanadium |
| Cr | - Chromium | $NO_3^-$ | - Nitrate |
| Cu | - Copper | $SO_4^{2-}$ | - Sulphate |
| Fe | - Iron | $Cl^-$ | - Chlorine |
| Mn | - Manganese | C | - Carbon |
| Ni | - Nickel | | |

## Table 3: Ontario Air Monitoring Network for $PM_{10}$ 24-Hour Sampling for 2000

| CITY | STATION NAME | ID | YR. | TYPE | LAT. | LONG. | ELEV. | IP | Cu | Fe | Mn | Pb | Cr | Cd | V | Ni | $SO_4^{2-}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WINDSOR | WRIGHT/WATER ST. | 12507 | 90 | A | 42:17 | 82:16 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| WINDSOR DOWNTOWN | 467 UNIVERSITY AVE. W. | 12508 | 89 | A | 42:19 | 83:02 | 8 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| WINDSOR | 3665 WYANDOTTE ST. E. | 12513 | 92 | A | 42:19 | 83:00 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| WINDSOR | 1400 ROSELAWN DR., ST. GABRIEL S.S. | 12556 | 98 | A | 42:15 | 83:01 | 10 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| WINDSOR | 5305 ADSTOL AVE., ST. ALEXANDER S.S. | 12559 | 98 | A | 42:18 | 82:57 | 10 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| WINDSOR | 13765 ST. GREGORY'S RD., ST. GREGORY'S S.S. | 12583 | 98 | A | 42:19 | 82:51 | 10 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| SARNIA | 6TH LINE, MOORE TOWNSHIP | 14550 | 97 | I | 42:58 | 82:24 | 3 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| SARNIA | FRONT ST./CN TRACKS, CENTENNIAL PARK | 14564 | 97 | A | 42:59 | 82:24 | 3 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| LONDON | 900 HIGHBURY AVE. | 15525 | 96 | A | 42:58 | 81:12 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| BEACHVILLE | EARL LANTZ PROPERTY | 17550 | 98 | I | 43:06 | 80:52 | 2 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| NANTICOKE | SANDUSK RD., WALPOLE SOUTH P.S. | 22304 | 92 | I | 42:50 | 80:02 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| ST. CATHARINES | 71 KING ST. | 27308 | 91 | I | 43:10 | 79:15 | 12 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| THOROLD | 185 QUEEN ST. S. | 27352 | 90 | I | 43:07 | 79:12 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON DOWNTOWN | ELGIN\KELLY ST. | 29300 | 90 | A | 43:15 | 79:52 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON | 467 BEACH BLVD. | 29302 | 89 | I | 43:17 | 79:47 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON | GERTRUDE/DEPEW ST. | 29313 | 90 | I | 43:15 | 79:49 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| HAMILTON MOUNTAIN | VICKERS RD./EAST 18TH ST. | 29314 | 99 | A | 43:14 | 79:53 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| ETOBICOKE | EVANS AVE./ARNOLD CRES. | 35127 | 97 | A | 43:37 | 79:31 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| OAKVILLE | BRONTE RD./WOBURN CRES. | 44127 | 92 | I | 43:24 | 79:44 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| MISSISSAUGA | APPLE LANE, MEADOW PARK | 46127 | 93 | I | 43:31 | 79:36 | 1 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| FORT FRANCES | ARMIT AVE./4TH ST. | 62201 | 00 | I | 48:38 | 93:23 | 9 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| THUNDER BAY | JAMES/WALSH ST. | 63201 | 89 | A | 48:23 | 89:17 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| SAULT STE. MARIE | BONNEY ST., PUMPHOUSE | 71342 | 89 | I | 46:31 | 84:23 | 2 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |

## Table 3: Ontario Air Monitoring Network for $PM_{10}$ 24-Hour Sampling for 2000

| CITY | STATION NAME | ID | YR. | TYPE | LAT. | LONG. | ELEV. | IP | Cu | Fe | Mn | Pb | Cr | Cd | V | Ni | $SO_4^{2-}$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAULT STE. MARIE | PATRICK ST., WM. MERRIFIELD SCHOOL | 71368 | 90 | A | 46:32 | 84:21 | 3 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| SUDBURY | 19 LISGAR ST. | 77326 | 91 | A | 46:29 | 80:59 | 8 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| COPPER CLIFF | MARKET ST. | 77570 | 96 | I | 46:28 | 81:04 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| **TOTALS:** | | | | | | | | **26** | **26** | **26** | **26** | **26** | **26** | **26** | **26** | **26** | **26** |

***Notes:***

*- Samplers operate on a 6-day sampling cycle*

**RECENT CHANGES TO THE 2000 PM10 24-HOUR AIR MONITORING NETWORK:**

Stations added to the network: Fort Frances (62201).

Station resumed monitoring in 2000: Sudbury (77326).

Stations removed from the network: Elmira (26365); Hamilton (29324); and Fort Frances (62135).

**LEGEND:**

| | | | | | |
|---|---|---|---|---|---|
| ID | - Station identification number | Cr | - Chromium | IP | - Inhalable Particulate |
| TYPE | - A: ambient survey; I: source specific survey | Cd | - Cadmium | Cu | - Copper |
| YR. | - Year station monitoring began | V | - Vandium | Fe | - Iron |
| LAT. | - Latitude (degrees:minutes) | Ni | - Nickel | Mn | - Manganese |
| LONG. | - Longitude (degrees:minutes) | $SO_4^{2-}$ | - Sulphate | Pb | - Lead |
| ELEV. | - Air intake above ground (m) | | | | |

## Table 4: Ontario Meteorological Network for 2000

| CITY | STATION NAME | ID | YR. | LAT. | LONG. | WS1 | HT1 | WS2 | HT2 | WS3 | HT3 | TEM | DT1 | DT2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WINDSOR | WRIGHT/WATER ST. | 12007 | 84 | 42:17 | 82:16 | T | 10 | T | 40 | . | . | T | T | . |
| LITTLE RIVER | 9725 RIVERSIDE DR. E. | 12009 | 99 | 42:20 | 82:55 | T | 15 | . | . | . | . | . | . | . |
| MERLIN | MIDDLE RD., MOE WATER PUMP STN. | 13021 | 77 | 42:15 | 82:13 | T | 9 | . | . | . | . | . | . | |
| COURTRIGHT | HWY 40 (OPPOSITE OPG) | 14016 | 75 | 42:48 | 82:29 | T | 10 | T | 30 | T | 90 | T | T | T |
| PARKHILL | PUC BUILDING | 15013 | 83 | 43:10 | 81:41 | T | 10 | . | . | . | . | . | . | |
| | | | | | | | | | | | | | | |
| BEACHVILLE | 26 VINE ST, MOE TRAILER | 17015 | 89 | 43:04 | 80:51 | T | 9 | . | . | . | . | . | . | |
| JARVIS | HYDRO MET TOWER (2 KM NE JARVIS) | 22883 | 84 | 42:54 | 80:05 | T | 10 | . | . | T | 85 | T | | |
| LONG POINT | PROVINCIAL PARK | 22901 | 79 | 42:35 | 80:23 | T | 10 | . | . | T | 85 | T | . | . |
| NANTICOKE | RAINHAM RD. (NEAR STELCO GATE) | 22907 | 89 | 42:48 | 80:04 | T | 10 | . | . | . | . | | | |
| CAMBRIDGE | CLYDE RD. | 26066 | 91 | 43:38 | 80:29 | T | 30 | . | . | . | . | T | | . |
| | | | | | | | | | | | | | | |
| ELMIRA | UNION/PARK | 26070 | 99 | 43:35 | 80:33 | T | 6 | . | . | . | . | . | . | . |
| ALLANBURG | HWY 58, TRANSFORMER STN. | 27011 | 81 | 43:04 | 79:11 | . | . | T | 37 | . | . | T | . | |
| HAMILTON | N. BRAMPTON/WOODWARD | 29026 | 75 | 43:15 | 79:46 | T | 10 | . | . | T | 91 | T | . | T |
| TORONTO | 51 LARCHMOUNT AVE., BRUCE P.S. | 31045 | 75 | 43:39 | 79:25 | T | 21 | . | . | . | . | . | . | . |
| TORONTO EAST | KENNEDY/LAWRENCE | 33003 | 75 | 43:45 | 79:16 | T | 12 | . | . | T | 76 | T | . | T |
| | | | | | | | | | | | | | | |
| ETOBICOKE | EVANS/ARNOLD AVE. | 35033 | 75 | 43:37 | 79:31 | T | 10 | T | 30 | T | 91 | T | T | T |
| BURLINGTON | HWY 2/ NORTH SHORE BLVD. | 44008 | 79 | 43.19 | 79:48 | T | 10 | . | . | . | . | . | . | |
| OAKVILLE | BRONTE RD./WOBURN CRES. | 44015 | 80 | 43:24 | 79:44 | T | 10 | . | . | . | . | . | . | . |
| STOUFFVILLE | HWY 47 (E. HWY 48) | 48002 | 82 | 43:58 | 79:16 | T | 10 | . | . | . | . | T | . | |
| KINGSTON | 133 DALTON ST. | 52020 | 93 | 44:15 | 76:31 | T | 10 | . | . | . | . | . | . | . |
| | | | | | | | | | | | | | | |
| DRYDEN | 35 VAN HORNE AVE. | 61027 | 84 | 49:47 | 92:50 | T | 18 | . | . | . | . | . | . | . |
| FORT FRANCES | EIGHTH ST./CORNWALL AVE. | 62047 | 90 | 48:37 | 93:25 | T | 10 | . | . | . | . | T | . | |
| MARATHON | PETER ST. | 63033 | 91 | 48:43 | 86:23 | T | 8 | . | . | . | . | . | . | |
| TERRACE BAY | SELKIRK ST., ST. MARTIN SCHOOL | 63090 | 82 | 48:47 | 87:05 | T | 12 | . | . | . | . | . | . | |
| THUNDER BAY | 615 JAMES ST. S., MOT | 63200 | 90 | 48:22 | 89:17 | T | 10 | . | . | . | . | . | . | |

## Table 4: Ontario Meteorological Network for 2000

| CITY | STATION NAME | ID | YR. | LAT. | LONG. | WS1 | HT1 | WS2 | HT2 | WS3 | HT3 | TEM | DT1 | DT2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAULT STE. MARIE | PATRICK ST., WM. MERRIFIELD SCHOOL | 71068 | 87 | 46:32 | 84:21 | T | 10 | . | . | . | . | T | . | . |
| NORTH BAY | CHIPPEWA ST. | 75010 | 87 | 46:19 | 79:27 | T | 10 | . | . | . | . | T | . | . |
| SUDBURY | HANMER | 77013 | 82 | 46:39 | 80:57 | T | 10 | . | . | . | . | T | . | . |
| SUDBURY | 699 FROOD RD., CKNC-TV | 77025 | 73 | 46:30 | 81:00 | T | 10 | . | . | T | 115 | T | . | T |
| **TOTALS:** | | | | | | **28** | **28** | **4** | **4** | **7** | **7** | **15** | **3** | **5** |

**RECENT CHANGES TO THE 2000 METEOROLOGICAL NETWORK:**

Stations removed from the network: Flamborough (29117); Hamilton (29531); Toronto (31025 and 31120); Cornwall (56051); and Red Rock (63084).

**LEGEND:**

ID - Station identification number
YR. - Year station monitoring began
LAT. - Latitude (degrees:minutes)
T - Telemetry
LONG. - Longitude (degrees:minutes)

WS1 - Wind speed and wind direction below 23 m
HT1 - Sensor height (meters) level 1
WS2 - Wind speed and wind direction 23 m to 76 m
HT2 - Sensor height (meters) level 2
WS3 - Wind speed and wind direction above 76 m
HT3 - Sensor height (meters) level 3

TEM - Ambient temperature
DT1 - Temperature difference level 2 minus 1
DT2 - Temperature difference level 3 minus 1

## Table 5: Sulphur Dioxide ($SO_2$) Statistics (2000)

**Unit: parts per billion (ppb)**
**$SO_2$ 1-hour AAQC is 250 ppb**
**$SO_2$ 24-hour AAQC is 100 ppb**
**$SO_2$ 1-year AAQC is 20 ppb**

| | | | | PERCENTILES | | | | | | | Maximum | | # of Times Above Criteria | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | 1h | 24h | 1y |
| 12007 | Windsor | Wright/Water St. | 7975 | 1 | 2 | 4 | 6 | 12 | 28 | 5.6 | 100 | 20.2 | 0 | 0 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 8671 | 1 | 2 | 3 | 7 | 15 | 39 | 6.2 | 91 | 25.2 | 0 | 0 | 0 |
| 12009 | Windsor | Tecumseh Water Treatment Plant | 8645 | 0 | 1 | 3 | 5 | 10 | 29 | 4.4 | 98 | 18.8 | 0 | 0 | 0 |
| 12016 | Windsor West | College/South St. | 8776 | 1 | 3 | 6 | 10 | 20 | 44 | 8.8 | 182 | 45.1 | 0 | 0 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 8711 | 1 | 3 | 5 | 8 | 16 | 64 | 8.0 | 149 | 33.6 | 0 | 0 | 0 |
| 14064 | Samia | Front St./CN Tracks, Centennial Park | 8653 | 1 | 2 | 3 | 6 | 25 | 114 | 10.4 | 239 | 78.1 | 0 | 0 | 0 |
| 15025 | London | 900 Highbury Ave. | 8502 | 0 | 1 | 2 | 4 | 8 | 17 | 3.5 | 32 | 15.8 | 0 | 0 | 0 |
| 22071 | Simcoe | HWY 3/Blue Line Rd. | 8586 | 1 | 2 | 3 | 5 | 9 | 21 | 4.3 | 90 | 20.2 | 0 | 0 | 0 |
| 22086 | Nanticoke | Cheapside Rd. (3 km S. of HWY 3) | 8724 | 1 | 2 | 3 | 5 | 11 | 33 | 4.9 | 213 | 51.4 | 0 | 0 | 0 |
| 22901 | Long Point | Provincial Park | 8621 | 0 | 1 | 3 | 4 | 8 | 20 | 3.7 | 65 | 16.1 | 0 | 0 | 0 |
| 22904 | Nanticoke | Sandusk Rd., Walpole South P.S. | 8336 | 1 | 2 | 3 | 5 | 11 | 27 | 4.9 | 206 | 42.7 | 0 | 0 | 0 |
| 22907 | Nanticoke | Nanticoke Village | 8736 | 1 | 3 | 4 | 7 | 16 | 43 | 7.0 | 131 | 38.0 | 0 | 0 | 0 |
| 26060 | Kitchener | West Ave./Homewood | 8732 | 1 | 1 | 2 | 3 | 7 | 16 | 3.2 | 37 | 16.7 | 0 | 0 | 0 |
| 26070 | Elmira | Union/Park | 8016 | 0 | 1 | 2 | 3 | 7 | 39 | 3.4 | 132 | 24.8 | 0 | 0 | 0 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 7773 | 0 | 1 | 2 | 3 | 7 | 17 | 3.0 | 38 | 13.0 | 0 | 0 | 0 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8673 | 0 | 1 | 3 | 5 | 12 | 37 | 5.1 | 76 | 24.0 | 0 | 0 | 0 |
| 29025 | Hamilton | Barton/Sanford | 8705 | 1 | 2 | 4 | 7 | 17 | 46 | 7.0 | 86 | 29.9 | 0 | 0 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 8655 | 0 | 1 | 4 | 9 | 26 | 65 | 9.4 | 121 | 38.1 | 0 | 0 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 8559 | 0 | 2 | 4 | 6 | 13 | 33 | 5.8 | 85 | 24.5 | 0 | 0 | 0 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8460 | 0 | 1 | 3 | 5 | 9 | 21 | 4.0 | 51 | 14.8 | 0 | 0 | 0 |
| 31103 | Toronto Downtown | Bay/Wellesley | 6262 | 2 | 3 | 3 | 5 | 9 | 20 | 4.7 | 51 | 17.0 | 0 | 0 | 0 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park. | 8568 | 1 | 1 | 2 | 4 | 8 | 21 | 3.6 | 165 | 24.8 | 0 | 0 | 0 |
| 35033 | Etobicoke | Evans/Amold Ave. | 8617 | 2 | 3 | 4 | 5 | 10 | 20 | 5.2 | 65 | 19.5 | 0 | 0 | 0 |
| 36030 | York | Clearview Heights | 8623 | 1 | 2 | 3 | 5 | 9 | 22 | 4.4 | 102 | 17.4 | 0 | 0 | 0 |
| 44008 | Burlington | HWY 2/North Shore Blvd. E. | 8752 | 2 | 3 | 4 | 5 | 10 | 22 | 5.2 | 65 | 31.0 | 0 | 0 | 0 |
| 44015 | Oakville | Bronte Rd./Wobum Cres. | 7903 | 1 | 2 | 3 | 6 | 10 | 22 | 4.8 | 42 | 18.9 | 0 | 0 | 0 |

## Table 5: Sulphur Dioxide ($SO_2$) Statistics (2000)

**Unit: parts per billion (ppb)**
**$SO_2$ 1-hour AAQC is 250 ppb**
**$SO_2$ 24-hour AAQC is 100 ppb**
**$SO_2$ 1-year AAQC is 20 ppb**

|  |  |  |  |  |  |  |  |  |  |  |  |  | # of Times |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  | PERCENTILES |  |  |  |  |  |  | Maximum |  | Above Criteria |  |  |
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | 1h | 24h | 1y |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4396 | 0 | 0 | 1 | 3 | 6 | 17 | INS | 50 | 11.1 | 0 | 0 | 0 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8738 | 2 | 2 | 3 | 5 | 8 | 21 | 4.6 | 279 | 42.0 | 1 | 0 | 0 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8640 | 0 | 2 | 3 | 6 | 9 | 15 | 4.1 | 32 | 15.9 | 0 | 0 | 0 |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 8627 | 1 | 1 | 3 | 4 | 7 | 18 | 3.5 | 67 | 17.4 | 0 | 0 | 0 |
| 59006 | Peterborough | 10 Hospital Dr. | 8553 | 0 | 0 | 1 | 2 | 4 | 12 | 1.7 | 21 | 10.8 | 0 | 0 | 0 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8749 | 0 | 0 | 0 | 0 | 1 | 5 | 0.3 | 37 | 3.08 | 0 | 0 | 0 |
| 71068 | Sault Ste. Marie | Patrict St., Wm. Merrifield School | 8664 | 0 | 0 | 1 | 2 | 4 | 31 | 2.0 | 94 | 21.2 | 0 | 0 | 0 |
| 77012 | Sudbury | Skead | 8692 | 0 | 0 | 0 | 1 | 9 | 94 | 5.2 | 630 | 63.7 | 8 | 0 | 0 |
| 77013 | Sudbury | Hanmer | 8738 | 0 | 0 | 1 | 2 | 6 | 67 | 4.0 | 381 | 65.1 | 3 | 0 | 0 |
| 77016 | Sudbury | Ash St., Water Tank | 8768 | 0 | 0 | 2 | 4 | 12 | 79 | 5.6 | 379 | 48.3 | 3 | 0 | 0 |
| 77028 | Coniston | Government Rd./Edward St. | 8775 | 0 | 0 | 1 | 2 | 6 | 54 | 3.6 | 567 | 63.2 | 5 | 0 | 0 |
| 77065 | Garson | Falconbridge Rd. | 8770 | 0 | 0 | 1 | 3 | 7 | 64 | 4.1 | 799 | 53.3 | 2 | 0 | 0 |
| 77075 | New Sudbury | Kennedy St. | 8522 | 0 | 0 | 1 | 2 | 7 | 59 | 3.8 | 500 | 33.7 | 2 | 0 | 0 |
| 77201 | Sudbury | Mikkola, J. Hamilton School | 8772 | 0 | 0 | 0 | 1 | 5 | 60 | 3.2 | 420 | 53.3 | 6 | 0 | 0 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 8746 | 0 | 0 | 1 | 3 | 7 | 60 | 4.2 | 567 | 47.6 | 5 | 0 | 0 |
| 77206 | Rayside | St. Laurent/Regional Rd. | 8737 | 0 | 0 | 0 | 1 | 3 | 28 | 1.7 | 244 | 36.8 | 0 | 0 | 0 |
| 77218 | Copper Cliff | Market St. | 8759 | 0 | 0 | 0 | 1 | 10 | 72 | 4.3 | 280 | 75.7 | 2 | 0 | 0 |
| 77225 | Sudbury | Robinson School | 8630 | 0 | 1 | 2 | 3 | 9 | 72 | 4.9 | 352 | 44.3 | 6 | 0 | 0 |
| 77228 | Sudbury | Dozzi Park | 8737 | 0 | 0 | 0 | 1 | 10 | 65 | 3.8 | 279 | 42.7 | 1 | 0 | 0 |

## Table 6: Suspended Particles (SP) Statistics (2000)

**Unit: COHS/1000 FT**

**COH 24-hour AAQC is 1.0 COH unit**

**COH 1-year AAQC is 0.5 COH unit**

| | | | | PERCENTILES | | | | | | | Maximum | | # of Times Above Criteria | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | 24h | 1y |
| 12008 | Windsor Downtown | 467 University Ave. W. | 8655 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.7 | 0.16 | 1.5 | 0.54 | 0 | 0 |
| 12016 | Windsor West | College/South St. | 8451 | 0.1 | 0.1 | 0.2 | 0.3 | 0.4 | 0.9 | 0.22 | 1.8 | 0.64 | 0 | 0 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8496 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.7 | 0.16 | 1.5 | 0.54 | 0 | 0 |
| 15025 | London | 900 Highbury Ave. | 8170 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.6 | 0.14 | 1.6 | 0.48 | 0 | 0 |
| 22907 | Nanticoke | Nanticoke Village | 8329 | 0.0 | 0.1 | 0.1 | 0.2 | 0.4 | 0.6 | 0.17 | 1.4 | 0.59 | 0 | 0 |
| 26060 | Kitchener | West Ave./Homewood | 8470 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.7 | 0.16 | 2.4 | 0.64 | 0 | 0 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8487 | 0.0 | 0.1 | 0.2 | 0.2 | 0.4 | 0.8 | 0.19 | 1.8 | 0.83 | 0 | 0 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8439 | 0.1 | 0.1 | 0.2 | 0.3 | 0.6 | 1.3 | 0.31 | 3.5 | 1.39 | 2 | 0 |
| 29025 | Hamilton | Barton/Sanford | 8594 | 0.1 | 0.2 | 0.2 | 0.3 | 0.6 | 1.2 | 0.30 | 3.0 | 1.06 | 2 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 8408 | 0.1 | 0.1 | 0.3 | 0.4 | 0.6 | 1.2 | 0.32 | 2.5 | 1.04 | 1 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 8578 | 0.0 | 0.1 | 0.1 | 0.2 | 0.4 | 0.8 | 0.18 | 1.9 | 0.88 | 0 | 0 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8210 | 0.1 | 0.1 | 0.2 | 0.3 | 0.5 | 0.9 | 0.23 | 1.4 | 0.89 | 0 | 0 |
| 29547 | Hamilton | Pier 25/Beach Strip | 8507 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 | 1.2 | 0.32 | 3.9 | 0.93 | 0 | 0 |
| 29565 | Hamilton | Homeside II | 3008 | 0.0 | 0.1 | 0.2 | 0.3 | 0.6 | 1.2 | INS | 2.1 | 0.94 | 0 | 0 |
| 29567 | Hamilton | Niagara/Land St. | 7362 | 0.1 | 0.2 | 0.4 | 0.6 | 1.0 | 2.0 | 0.51 | 5.0 | 1.51 | 15 | 1 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8473 | 0.1 | 0.2 | 0.3 | 0.4 | 0.7 | 1.4 | 0.33 | 2.9 | 1.11 | 2 | 0 |
| 36030 | York | Clearview Heights | 8477 | 0.1 | 0.1 | 0.2 | 0.3 | 0.5 | 1.2 | 0.23 | 2.7 | 1.00 | 1 | 0 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8513 | 0.0 | 0.1 | 0.2 | 0.3 | 0.5 | 1.1 | 0.24 | 4.5 | 1.31 | 3 | 0 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8223 | 0.1 | 0.2 | 0.2 | 0.4 | 0.6 | 1.5 | 0.33 | 3.2 | 0.95 | 0 | 0 |
| 56051 | Cornwall | Bedford/Third, Memorial Park | 4019 | 0.0 | 0.1 | 0.1 | 0.2 | 0.3 | 0.8 | INS | 1.3 | 0.73 | 0 | 0 |
| 62200 | Fort Frances | Armit Ave./4th St., Robert Moore P.S. | 3755 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | INS | 1.0 | 0.21 | 0 | 0 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8544 | 0.0 | 0.1 | 0.1 | 0.2 | 0.4 | 0.8 | 0.16 | 1.8 | 0.71 | 0 | 0 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 8480 | 0.0 | 0.1 | 0.1 | 0.2 | 0.5 | 1.2 | 0.20 | 3.5 | 1.00 | 1 | 0 |
| 75010 | North Bay | Chippawa St., Dept. National Defense | 3429 | 0.0 | 0.0 | 0.1 | 0.1 | 0.3 | 0.6 | INS | 1.1 | 0.44 | 0 | 0 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 8414 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.4 | 0.08 | 1.0 | 0.46 | 0 | 0 |

## Table 7: Total Reduced Sulphur (TRS) Statistics (2000)

**Unit: parts per billion (ppb)**

**TRS 1-hour AAQC is 27 ppb**

| | | | | PERCENTILES | | | | | | | Maximum | | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | Above Criterion |
| 12007 | Windsor | Wright/Water St. | 8755 | 0 | 0 | 1 | 1 | 3 | 14 | 1.4 | 43 | 11.3 | 12 |
| 12016 | Windsor West | College/South St. | 8759 | 0 | 0 | 0 | 1 | 3 | 13 | 1.1 | 101 | 19.3 | 26 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8642 | 0 | 0 | 0 | 1 | 2 | 5 | 0.7 | 16 | 3.6 | 0 |
| 22904 | Nanticoke | Sandusk Rd., Walpole South P.S. | 8499 | 0 | 0 | 0 | 1 | 1 | 3 | 0.5 | 21 | 4.2 | 0 |
| 22907 | Nanticoke | Nanticoke Village | 8737 | 0 | 0 | 1 | 1 | 2 | 6 | 0.9 | 35 | 6.4 | 3 |
| 26070 | Elmira | Union/Park | 8514 | 0 | 0 | 1 | 1 | 2 | 5 | 0.7 | 24 | 6.8 | 0 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8667 | 0 | 0 | 0 | 1 | 2 | 7 | 0.7 | 42 | 7.8 | 1 |
| 29025 | Hamilton | Barton/Sanford | 8679 | 0 | 0 | 1 | 1 | 2 | 8 | 1.0 | 20 | 6.2 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 7349 | 0 | 0 | 1 | 1 | 3 | 10 | 1.3 | 38 | 9.0 | 2 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 5809 | 0 | 0 | 0 | 1 | 1 | 4 | 0.5 | 12 | 4.0 | 0 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8700 | 0 | 0 | 0 | 1 | 1 | 4 | 0.6 | 14 | 3.8 | 0 |
| 29547 | Hamilton | Pier 25/Beach Strip | 7372 | 0 | 0 | 1 | 1 | 4 | 15 | 1.5 | 49 | 8.0 | 8 |
| 29567 | Hamilton | Niagara/Land St. | 7402 | 0 | 0 | 1 | 1 | 3 | 11 | 1.3 | 69 | 10.2 | 4 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8513 | 0 | 1 | 1 | 1 | 2 | 5 | 1.2 | 9 | 5.0 | 0 |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 8475 | 0 | 0 | 1 | 1 | 3 | 7 | 1.1 | 18 | 7.4 | 0 |
| 61027 | Dryden | 35 Van Horne Ave. | 8765 | 0 | 0 | 0 | 0 | 1 | 11 | 0.6 | 39 | 7.6 | 2 |
| 62030 | Fort Frances | Portage/Church St. | 8721 | 0 | 0 | 0 | 1 | 7 | 19 | 2.1 | 71 | 15.9 | 24 |
| 62032 | Fort Frances | Colonization Rd. W., Cemetery | 8738 | 0 | 0 | 0 | 0 | 2 | 9 | 0.7 | 124 | 11.6 | 7 |
| 62047 | Fort Frances | Eighth St./Cornwall Ave. | 8683 | 0 | 0 | 0 | 0 | 3 | 22 | 1.3 | 96 | 15.0 | 56 |
| 62200 | Fort Frances | Armit Ave./4th St., Robert Moore P.S. | 8486 | 0 | 0 | 0 | 0 | 2 | 8 | 0.5 | 52 | 5.4 | 6 |
| 63033 | Marathon | Peter St. | 8398 | 0 | 0 | 0 | 0 | 0 | 2 | 0.1 | 20 | 3.2 | 0 |
| 63046 | Thunder Bay | Montreal St., Bombardier | 8763 | 0 | 0 | 0 | 1 | 4 | 20 | 1.5 | 66 | 13.9 | 37 |
| 63084 | Red Rock | Brompton Rd., Recreation Ctr | 8515 | 0 | 0 | 0 | 0 | 6 | 63 | 3.2 | 281 | 104.6 | 273 |
| 63090 | Terrace Bay | Selkirk St., St. Martin School | 8646 | 0 | 0 | 0 | 0 | 2 | 16 | 0.9 | 70 | 12.7 | 41 |
| 63092 | Terrace Bay | Terrace Heights Dr. | 8718 | 0 | 0 | 0 | 0 | 3 | 21 | 1.3 | 77 | 16.9 | 51 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8738 | 0 | 0 | 0 | 0 | 0 | 4 | 0.2 | 31 | 3.0 | 1 |
| 63202 | Thunder Bay | Victor St. | 5638 | 0 | 0 | 0 | 0 | 2 | 13 | 0.7 | 33 | 8.4 | 5 |
| 63204 | Thunder Bay | Mary St. | 1957 | 0 | 0 | 0 | 0 | 1 | 7 | INS | 14 | 5.3 | 0 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 8003 | 0 | 0 | 0 | 0 | 1 | 4 | 0.3 | 13 | 3.2 | 0 |
| 72115 | Smooth Rock Falls | 54 Second Ave. | 4603 | 0 | 0 | 0 | 0 | 5 | 42 | INS | 120 | 30.0 | 102 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 7659 | 0 | 0 | 0 | 0 | 1 | 1 | 0.1 | 5 | 0.9 | 0 |

## Table 8: Carbon Monoxide (CO) Statistics (2000)

**Unit: parts per million (ppm)**
**CO 1-hour AAQC is 30 ppm**
**CO 8-hour AAQC is 13 ppm**

|  |  |  |  |  |  |  |  |  |  |  |  |  | # of Times |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  | PERCENTILES |  |  |  |  |  |  | Maximum |  | Above Criteria |  |
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 8h | 1h | 8h |
| 12008 | Windsor Downtown | 467 University Ave. W. | 8586 | 0.01 | 0.08 | 0.16 | 0.28 | 0.60 | 1.97 | 0.27 | 11.82 | 3.57 | 0 | 0 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8645 | 0.23 | 0.31 | 0.37 | 0.46 | 0.64 | 1.11 | 0.42 | 3.86 | 1.69 | 0 | 0 |
| 15025 | London | 900 Highbury Ave. | 8496 | 0.00 | 0.05 | 0.11 | 0.19 | 0.34 | 0.95 | 0.16 | 2.47 | 1.46 | 0 | 0 |
| 26060 | Kitchener | West Ave./Homewood | 8726 | 0.19 | 0.29 | 0.37 | 0.45 | 0.62 | 1.69 | 0.41 | 4.98 | 3.34 | 0 | 0 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8064 | 0.12 | 0.23 | 0.30 | 0.39 | 0.61 | 1.47 | 0.35 | 3.83 | 2.07 | 0 | 0 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8588 | 0.47 | 0.58 | 0.69 | 0.82 | 1.12 | 2.02 | 0.76 | 7.28 | 2.50 | 0 | 0 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8426 | 0.18 | 0.30 | 0.40 | 0.53 | 0.86 | 1.72 | 0.47 | 3.05 | 2.02 | 0 | 0 |
| 31103 | Toronto Downtown | Bay/Wellesley | 6272 | 0.35 | 0.76 | 1.32 | 1.70 | 2.12 | 2.56 | 1.26 | 3.61 | 2.72 | 0 | 0 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 8729 | 1.10 | 1.41 | 1.64 | 1.96 | 2.58 | 3.91 | 1.77 | 7.72 | 4.88 | 0 | 0 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8619 | 0.58 | 1.13 | 1.97 | 2.25 | 2.66 | 3.39 | 1.72 | 6.02 | 4.20 | 0 | 0 |
| 36030 | York | Clearview Heights | 8514 | 0.30 | 0.58 | 0.76 | 1.04 | 1.78 | 3.31 | 0.94 | 8.60 | 5.33 | 0 | 0 |
| 44008 | Burlington | HWY 2/North Shore Blvd. E. | 8492 | 1.02 | 1.21 | 1.38 | 1.57 | 1.74 | 2.16 | 1.39 | 2.99 | 2.23 | 0 | 0 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8589 | 0.12 | 0.24 | 0.35 | 0.48 | 0.87 | 1.44 | 0.42 | 3.32 | 2.11 | 0 | 0 |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4599 | 0.68 | 0.98 | 1.23 | 1.58 | 2.20 | 3.08 | INS | 6.60 | 3.71 | 0 | 0 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8743 | 0.81 | 1.10 | 1.37 | 1.57 | 1.86 | 2.85 | 1.37 | 7.26 | 4.95 | 0 | 0 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8652 | 0.40 | 0.50 | 0.58 | 0.70 | 0.98 | 1.68 | 0.65 | 3.22 | 1.96 | 0 | 0 |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 8614 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 2.00 | 0.29 | 4.00 | 3.00 | 0 | 0 |
| 59006 | Peterborough | 10 Hospital Dr. | 8648 | 0.46 | 0.71 | 0.81 | 0.91 | 1.11 | 1.78 | 0.82 | 3.22 | 1.97 | 0 | 0 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8707 | 0.38 | 0.58 | 0.78 | 0.98 | 1.26 | 1.87 | 0.81 | 4.77 | 2.64 | 0 | 0 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 8437 | 0.00 | 0.00 | 0.10 | 0.20 | 0.47 | 0.83 | 0.17 | 2.00 | 1.00 | 0 | 0 |

## Table 9: Nitrogen Dioxide ($NO_2$) Statistics (2000)

**Unit: parts per billion (ppb)**
**$NO_2$ 1-hour AAQC is 200 ppb**
**$NO_2$ 24-hour AAQC is 100 ppb**

|  |  |  |  | PERCENTILES |  |  |  |  |  |  | Maximum |  | # of Times Above Criteria |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | 1h | 24h |
| 12008 | Windsor Downtown | 467 University Ave. W. | 8552 | 9 | 14 | 20 | 26 | 37 | 54 | 21.6 | 104 | 44.7 | 0 | 0 |
| 12009 | Windsor | Tecumseh Water Treatment Plant | 7286 | 5 | 9 | 14 | 20 | 31 | 45 | 16.0 | 73 | 39.6 | 0 | 0 |
| 12016 | Windsor West | College/South St. | 4395 | 8 | 14 | 19 | 25 | 35 | 47 | INS | 61 | 41.5 | 0 | 0 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8546 | 4 | 8 | 13 | 21 | 33 | 50 | 16.3 | 156 | 44.6 | 0 | 0 |
| 15025 | London | 900 Highbury Ave. | 7612 | 6 | 10 | 15 | 21 | 33 | 52 | 17.4 | 88 | 49.5 | 0 | 0 |
| 22071 | Simcoe | HWY 3/Blue Line Rd. | 8521 | 3 | 5 | 7 | 10 | 16 | 30 | 8.6 | 45 | 27.6 | 0 | 0 |
| 22086 | Nanticoke | Cheapside Rd. (3 km S. of HWY 3) | 8715 | 2 | 3 | 5 | 8 | 13 | 25 | 6.5 | 40 | 20.2 | 0 | 0 |
| 22901 | Long Point | Provincial Park | 8386 | 2 | 3 | 5 | 7 | 13 | 24 | 6.3 | 40 | 22.1 | 0 | 0 |
| 26060 | Kitchener | West Ave./Homewood | 8721 | 5 | 8 | 12 | 18 | 30 | 43 | 14.7 | 57 | 40.7 | 0 | 0 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8498 | 8 | 11 | 15 | 20 | 29 | 40 | 16.9 | 56 | 37.6 | 0 | 0 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8657 | 10 | 15 | 20 | 27 | 37 | 50 | 21.8 | 73 | 44.3 | 0 | 0 |
| 29102 | Hamilton | 467 Beach Blvd | 7903 | 6 | 13 | 22 | 30 | 41 | 53 | 22.7 | 77 | 49.0 | 0 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 2231 | 4 | 9 | 13 | 20 | 30 | 40 | INS | 52 | 35.1 | 0 | 0 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8640 | 8 | 13 | 19 | 26 | 37 | 50 | 21.0 | 76 | 44.9 | 0 | 0 |
| 31103 | Toronto Downtown | Bay/Wellesley | 8127 | 13 | 19 | 25 | 32 | 44 | 59 | 26.8 | 87 | 52.8 | 0 | 0 |
| 31190 | Toronto | CN Tower ** | 8728 | 3 | 6 | 9 | 13 | 22 | 42 | 11.3 | 79 | 33.0 | 0 | 0 |
| 33003 | Toronto East | Lawrence/Kennedy | 8655 | 9 | 16 | 22 | 29 | 41 | 57 | 23.7 | 86 | 49.2 | 0 | 0 |
| 34020 | Toronto North | Yonge St./Finch Ave. | 8651 | 7 | 13 | 21 | 29 | 41 | 56 | 22.7 | 81 | 52.5 | 0 | 0 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 8735 | 9 | 15 | 22 | 29 | 40 | 55 | 23.2 | 84 | 50.1 | 0 | 0 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8610 | 13 | 20 | 26 | 34 | 46 | 63 | 28.2 | 106 | 64.2 | 0 | 0 |
| 36030 | York | Clearview Heights | 8675 | 7 | 11 | 16 | 22 | 34 | 63 | 18.9 | 157 | 69.5 | 0 | 0 |
| 44008 | Burlington | HWY 2/North Shore Blvd. E. | 8461 | 7 | 13 | 19 | 25 | 36 | 51 | 20.3 | 79 | 51.1 | 0 | 0 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8472 | 7 | 11 | 15 | 21 | 31 | 45 | 17.2 | 108 | 40.5 | 0 | 0 |
| 45025 | Oshawa | Ritson Rd./Olive Ave., Ritson Rd. P.S. | 8739 | 6 | 11 | 18 | 25 | 37 | 54 | 19.7 | 84 | 47.3 | 0 | 0 |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4397 | 6 | 10 | 15 | 24 | 36 | 50 | INS | 72 | 42.2 | 0 | 0 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8430 | 8 | 14 | 20 | 27 | 39 | 50 | 21.8 | 68 | 41.0 | 0 | 0 |
| 48002 | York Region | HWY 47/E. of HWY 48 | 8445 | 4 | 7 | 10 | 15 | 27 | 46 | 12.8 | 97 | 43.9 | 0 | 0 |
| 49010 | Haliburton | HWY 117/Paint Lake Rd | 8646 | 1 | 1 | 2 | 3 | 7 | 18 | 2.9 | 33 | 20.3 | 0 | 0 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8643 | 4 | 7 | 11 | 17 | 28 | 44 | 13.8 | 66 | 38.3 | 0 | 0 |

## Table 9: Nitrogen Dioxide ($NO_2$) Statistics (2000)

**Unit: parts per billion (ppb)**
**$NO_2$ 1-hour AAQC is 200 ppb**
**$NO_2$ 24-hour AAQC is 100 ppb**

| | | | | PERCENTILES | | | | | | | Maximum | | # of Times Above Criteria | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | 1h | 24h |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 6531 | 3 | 6 | 8 | 12 | 21 | 40 | 10.5 | 71 | 44.7 | 0 | 0 |
| 59006 | Peterborough | 10 Hospital Dr. | 8638 | 2 | 5 | 8 | 13 | 24 | 43 | 10.9 | 58 | 43.0 | 0 | 0 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8464 | 3 | 6 | 9 | 15 | 26 | 40 | 12.2 | 59 | 30.8 | 0 | 0 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 7834 | 3 | 5 | 9 | 14 | 23 | 38 | 10.9 | 58 | 35.7 | 0 | 0 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 7497 | 2 | 4 | 6 | 10 | 17 | 37 | 8.6 | 50 | 29.1 | 0 | 0 |

*Notes:*

- ** *CN Tower Site - measurements taken at 444 m above ground level*

## Table 10: Nitrogen Oxide (NO) Statistics (2000)

**Unit: parts per billion (ppb)**

| ID | City | Location | Valid h | PERCENTILES 10% | 30% | 50% | 70% | 90% | 99% | Mean | Maximum 1h | 24h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12008 | Windsor Downtown | 467 University Ave. W. | 8552 | 3 | 4 | 7 | 12 | 30 | 114 | 13.9 | 444 | 115.3 |
| 12009 | Windsor | Tecumseh Water Treatment Plant | 7286 | 1 | 3 | 5 | 7 | 17 | 69 | 8.4 | 277 | 78.4 |
| 12016 | Windsor West | College/South St. | 4395 | 2 | 3 | 6 | 12 | 38 | 152 | INS | 366 | 107.7 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8546 | 1 | 3 | 5 | 8 | 19 | 64 | 8.9 | 302 | 64.0 |
| 15025 | London | 900 Highbury Ave. | 7612 | 1 | 2 | 3 | 6 | 17 | 90 | 8.0 | 250 | 66.3 |
| 22071 | Simcoe | HWY 3/Blue Line Rd. | 8521 | 0 | 0 | 0 | 1 | 3 | 11 | 1.2 | 39 | 9.9 |
| 22086 | Nanticoke | Cheapside Rd. (3 km S. of HWY 3) | 8715 | 2 | 2 | 2 | 3 | 5 | 15 | 3.1 | 52 | 10.5 |
| 22901 | Long Point | Provincial Park | 8386 | 0 | 0 | 0 | 0 | 2 | 8 | 0.6 | 42 | 7.0 |
| 26060 | Kitchener | West Ave./Homewood | 8721 | 1 | 1 | 2 | 4 | 14 | 106 | 7.4 | 347 | 102.3 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8498 | 0 | 1 | 3 | 9 | 34 | 128 | 12.4 | 444 | 123.9 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8657 | 1 | 3 | 5 | 11 | 36 | 146 | 14.7 | 421 | 154.8 |
| 29102 | Hamilton | 467 Beach Blvd. | 7970 | 1 | 3 | 12 | 26 | 53 | 148 | 22.2 | 495 | 120.4 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 2231 | 1 | 2 | 3 | 6 | 20 | 79 | INS | 181 | 51.8 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8640 | 2 | 4 | 7 | 16 | 64 | 199 | 22.6 | 383 | 176.3 |
| 31103 | Toronto Downtown | Bay/Wellesley | 8127 | 3 | 4 | 6 | 12 | 32 | 125 | 14.4 | 325 | 130.3 |
| 31190 | Toronto | CN Tower ** | 8728 | 0 | 1 | 2 | 2 | 7 | 30 | 3.3 | 193 | 21.0 |
| 33003 | Toronto East | Lawrence/Kennedy | 8655 | 1 | 4 | 10 | 19 | 51 | 222 | 23.0 | 826 | 185.3 |
| 34020 | Toronto North | Yonge St./Finch Ave. | 8651 | 1 | 3 | 6 | 14 | 44 | 152 | 16.8 | 501 | 138.5 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 8735 | 1 | 3 | 5 | 12 | 47 | 223 | 19.3 | 481 | 160.3 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8610 | 3 | 9 | 17 | 31 | 76 | 294 | 34.6 | 704 | 208.5 |
| 36030 | York | Clearview Heights | 8675 | 1 | 3 | 6 | 13 | 49 | 254 | 20.6 | 700 | 204.0 |
| 44008 | Burlington | HWY 2/North Shore Blvd. E. | 8461 | 2 | 5 | 9 | 17 | 51 | 210 | 21.8 | 533 | 171.1 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8472 | 4 | 5 | 7 | 11 | 39 | 127 | 16.2 | 445 | 107.5 |
| 45025 | Oshawa | Ritson Rd./Olive Ave., Ritson Rd. P.S. | 8739 | 1 | 2 | 5 | 12 | 35 | 132 | 14.2 | 258 | 117.0 |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4397 | 1 | 3 | 4 | 8 | 39 | 142 | INS | 384 | 101.5 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8430 | 3 | 5 | 9 | 16 | 58 | 223 | 23.6 | 479 | 153.5 |
| 48002 | York Region | HWY 47/E. of HWY 48 | 8445 | 1 | 2 | 3 | 5 | 13 | 59 | 6.5 | 232 | 60.3 |
| 49010 | Haliburton | HWY 117/Paint Lake Rd. | 8646 | 0 | 0 | 0 | 0 | 0 | 3 | 0.1 | 12 | 3.2 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8643 | 4 | 5 | 7 | 9 | 19 | 86 | 11.0 | 261 | 78.2 |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 6531 | 0 | 0 | 1 | 2 | 6 | 58 | 3.4 | 232 | 49.2 |
| 59006 | Peterborough | 10 Hospital Dr. | 8638 | 0 | 1 | 2 | 3 | 9 | 55 | 4.6 | 151 | 40.6 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8464 | 1 | 2 | 4 | 7 | 24 | 87 | 9.4 | 291 | 60.2 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 7834 | 0 | 1 | 2 | 4 | 13 | 62 | 5.9 | 222 | 50.0 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 7497 | 1 | 1 | 2 | 4 | 10 | 40 | 4.5 | 150 | 52.0 |

*Notes:*

- *** CN Tower site - measurements taken at 444 m above ground level*

## Table 11: Nitrogen Oxides ($NO_x$) Statistics (2000)

**Unit: parts per billion (ppb)**

| | | | | PERCENTILES | | | | | | | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h |
| 12008 | Windsor Downtown | 467 University Ave. W. | 8552 | 14 | 20 | 28 | 39 | 64 | 161 | 36.0 | 527 | 159.4 |
| 12009 | Windsor | Tecumseh Water Treatment Plant | 7286 | 8 | 12 | 18 | 25 | 44 | 103 | 23.4 | 328 | 98.7 |
| 12016 | Windsor West | College/South St. | 4395 | 12 | 19 | 26 | 38 | 71 | 186 | INS | 412 | 149.3 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8546 | 7 | 12 | 18 | 29 | 51 | 103 | 25.0 | 459 | 98.0 |
| 15025 | London | 900 Highbury Ave. | 7612 | 7 | 12 | 17 | 26 | 47 | 136 | 24.7 | 297 | 103.5 |
| 22071 | Simcoe | HWY 2/Blue Line Rd. | 8521 | 3 | 5 | 7 | 11 | 19 | 36 | 9.5 | 67 | 37.2 |
| 22086 | Nanticoke | Cheapside Rd. (3 km S. of HWY 3) | 8715 | 3 | 5 | 7 | 11 | 18 | 34 | 9.4 | 73 | 30.0 |
| 22901 | Long Point | Provincial Park | 8386 | 2 | 3 | 5 | 8 | 15 | 29 | 7.1 | 74 | 26.4 |
| 26060 | Kitchener | West Ave./Homewood | 8721 | 6 | 10 | 14 | 22 | 43 | 138 | 21.9 | 377 | 133.8 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8498 | 8 | 13 | 19 | 29 | 60 | 160 | 28.8 | 501 | 148.8 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8657 | 13 | 19 | 26 | 38 | 70 | 191 | 37.0 | 484 | 198.8 |
| 29102 | Hamilton | 467 Beach Blvd. | 7970 | 7 | 18 | 37 | 56 | 88 | 192 | 44.6 | 559 | 162.1 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 2231 | 7 | 12 | 17 | 27 | 50 | 111 | INS | 214 | 87.1 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8640 | 11 | 18 | 27 | 43 | 97 | 236 | 43.5 | 428 | 219.3 |
| 31103 | Toronto Downtown | Bay/Wellesley | 8127 | 16 | 23 | 31 | 43 | 73 | 177 | 40.4 | 396 | 180.6 |
| 31190 | Toronto | CN Tower ** | 8728 | 4 | 7 | 11 | 16 | 29 | 69 | 14.6 | 272 | 48.4 |
| 33003 | Toronto East | Lawrence/Kennedy | 8655 | 11 | 22 | 32 | 48 | 90 | 277 | 46.3 | 900 | 227.2 |
| 34020 | Toronto North | Yonge St./Finch Ave. | 8651 | 8 | 17 | 28 | 44 | 82 | 200 | 39.3 | 581 | 185.9 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 8735 | 11 | 19 | 27 | 41 | 85 | 271 | 42.3 | 549 | 207.8 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8610 | 18 | 32 | 44 | 65 | 119 | 350 | 63.1 | 803 | 260.3 |
| 36030 | York | Clearview Heights | 8675 | 8 | 14 | 22 | 35 | 79 | 315 | 38.8 | 808 | 259.8 |
| 44008 | Burlington | HWY 2/North Shore Blvd. E. | 8461 | 10 | 19 | 29 | 42 | 86 | 247 | 42.2 | 597 | 221.7 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8472 | 10 | 16 | 22 | 32 | 68 | 167 | 33.0 | 524 | 136.8 |
| 45025 | Oshawa | Ritson Rd./Olive Ave., Ritson Rd. P.S. | 8739 | 7 | 14 | 24 | 38 | 70 | 174 | 33.6 | 317 | 158.8 |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4397 | 8 | 12 | 20 | 33 | 73 | 183 | INS | 439 | 142.3 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8430 | 13 | 20 | 28 | 44 | 94 | 265 | 45.2 | 530 | 192.1 |
| 48002 | York Region | HWY 47/E. of HWY 48 | 8445 | 6 | 9 | 13 | 19 | 38 | 98 | 18.8 | 272 | 97.2 |
| 49010 | Haliburton | HWY 117/Paint Lake Rd. | 8646 | 1 | 1 | 2 | 3 | 7 | 19 | 3.0 | 37 | 22.0 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8643 | 9 | 13 | 18 | 26 | 45 | 122 | 24.4 | 302 | 106.4 |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 6531 | 4 | 6 | 10 | 14 | 27 | 88 | 14.2 | 284 | 85.4 |

## Table 11: Nitrogen Oxides ($NO_x$) Statistics (2000)

**Unit: parts per billion (ppb)**

| | | | | | PERCENTILES | | | | | | Maximum | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h |
| 59006 | Peterborough | 10 Hospital Dr. | 8638 | 4 | 7 | 10 | 16 | 32 | 91 | 15.5 | 190 | 78.6 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8464 | 5 | 9 | 14 | 22 | 48 | 120 | 21.9 | 350 | 87.6 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 7834 | 3 | 6 | 10 | 18 | 35 | 93 | 16.3 | 271 | 85.2 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 7497 | 3 | 6 | 8 | 13 | 26 | 72 | 12.6 | 192 | 76.6 |

*Notes:*

- *** CN Tower site - measurements taken at 444 m above ground level*

## Table 12: Ozone ($O_3$) Statistics (2000)

**Unit: parts per billion (ppb)**

**$O_3$ 1-hour AAQC is 80 ppb**

| ID | City | Location | Valid h | PERCENTILES 10% | 30% | 50% | 70% | 90% | 99% | Mean | Maximum 1h | 24h | # of Times Above Criterion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12008 | Windsor Downtown | 467 University Ave. W. | 8663 | 1 | 7 | 16 | 25 | 41 | 66 | 18.6 | 103 | 61.4 | 22 |
| 12016 | Windsor West | College/South St. | 8773 | 0 | 5 | 14 | 23 | 40 | 64 | 17.0 | 106 | 59.3 | 13 |
| 13021 | Merlin | Middle Rd., MOE Water Pump Stn. | 8745 | 6 | 16 | 23 | 31 | 44 | 71 | 24.6 | 99 | 68.8 | 33 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 8457 | 4 | 15 | 24 | 32 | 43 | 68 | 24.3 | 107 | 61.3 | 15 |
| 14118 | Mandaumin | Concession Rd. 26 | 8645 | 8 | 17 | 25 | 32 | 44 | 71 | 25.9 | 122 | 68.1 | 42 |
| 15009 | Longwoods | Longwoods Conservation Authority | 8720 | 5 | 16 | 24 | 32 | 45 | 71 | 24.9 | 105 | 66.0 | 29 |
| 15013 | Parkhill | Puc Building | 8623 | 9 | 19 | 26 | 34 | 45 | 69 | 27.3 | 98 | 60.6 | 19 |
| 15020 | Grand Bend | HWY 21/County Rd. 85 | 8754 | 12 | 24 | 32 | 39 | 51 | 78 | 32.6 | 128 | 79.7 | 76 |
| 15025 | London | 900 Highbury Ave. | 8476 | 3 | 12 | 20 | 27 | 40 | 64 | 21.1 | 110 | 64.6 | 20 |
| 18007 | Tiverton | Lot C/Concession 5, Visitor Info. Ctr. | 8703 | 17 | 27 | 32 | 37 | 47 | 70 | 32.3 | 109 | 75.3 | 36 |
| 22071 | Simcoe | HWY 3/Blue Line Rd. | 8633 | 12 | 20 | 27 | 35 | 51 | 78 | 29.3 | 117 | 89.9 | 79 |
| 22901 | Long Point | Provincial Park | 8075 | 15 | 24 | 31 | 39 | 55 | 83 | 33.1 | 115 | 94.1 | 105 |
| 26060 | Kitchener | West Ave./Homewood | 8737 | 2 | 14 | 23 | 30 | 42 | 66 | 23.0 | 95 | 68.3 | 25 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8614 | 0 | 9 | 17 | 26 | 39 | 63 | 18.9 | 89 | 70.2 | 14 |
| 28028 | Guelph | Exhibition/Clark St. | 4164 | 4 | 14 | 22 | 30 | 43 | 68 | INS | 88 | 59.1 | 11 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8748 | 0 | 7 | 15 | 23 | 37 | 62 | 17.0 | 88 | 57.2 | 12 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 8368 | 2 | 13 | 21 | 29 | 43 | 69 | 22.6 | 93 | 74.0 | 22 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 8749 | 0 | 6 | 15 | 24 | 35 | 61 | 16.9 | 88 | 55.2 | 8 |
| 31103 | Toronto Downtown | Bay/Wellesley | 8571 | 3 | 10 | 17 | 25 | 39 | 62 | 19.7 | 99 | 54.5 | 12 |
| 31190 | Toronto | CN Tower ** | 8744 | 17 | 26 | 33 | 40 | 53 | 75 | 34.2 | 100 | 78.7 | 53 |
| 33003 | Toronto East | Kennedy/Lawrence | 8631 | 3 | 10 | 18 | 25 | 39 | 61 | 19.6 | 88 | 54.4 | 11 |
| 34020 | Toronto North | Yonge St./Finch Ave. | 8738 | 4 | 10 | 20 | 28 | 39 | 59 | 20.6 | 88 | 56.5 | 8 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 8737 | 3 | 8 | 18 | 26 | 41 | 66 | 20.1 | 97 | 61.7 | 24 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8588 | 3 | 8 | 14 | 22 | 37 | 62 | 17.4 | 94 | 56.7 | 16 |
| 36030 | York | Clearview Heights | 8681 | 3 | 8 | 17 | 26 | 39 | 64 | 19.3 | 94 | 54.4 | 15 |
| 44008 | Burlington | HWY 2/North Shore Blvd E. | 8749 | 4 | 13 | 22 | 31 | 44 | 65 | 23.4 | 89 | 60.8 | 14 |
| 44015 | Oakville | Bronte Rd./Woburn Cres. | 8419 | 3 | 10 | 20 | 29 | 41 | 63 | 21.0 | 93 | 61.8 | 12 |

## Table 12: Ozone ($O_3$) Statistics (2000)

**Unit: parts per billion (ppb)**

**$O_3$ 1-hour AAQC is 80 ppb**

| | | | | PERCENTILES | | | | | | | Maximum | | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Valid h | 10% | 30% | 50% | 70% | 90% | 99% | Mean | 1h | 24h | Above Criterion |
| 45025 | Oshawa | Ritson Rd./Olive Ave., Ritson Rd. P.S. | 8709 | 4 | 13 | 21 | 28 | 37 | 59 | 21.2 | 99 | 51.2 | 6 |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4398 | 2 | 10 | 20 | 28 | 42 | 66 | INS | 90 | 57.5 | 10 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8735 | 3 | 8 | 18 | 26 | 42 | 66 | 19.9 | 95 | 59.9 | 21 |
| 47005 | Georgian Bay South | 1385 River Road East | 2620 | 1 | 10 | 17 | 24 | 39 | 66 | INS | 81 | 51.7 | 1 |
| 48002 | York Region | HWY 47/E. of HWY 48 | 8691 | 9 | 21 | 28 | 33 | 43 | 65 | 27.5 | 90 | 58.3 | 15 |
| 49010 | Haliburton | HWY 117/Paint Lake Rd. | 8659 | 11 | 22 | 30 | 36 | 45 | 66 | 29.3 | 86 | 59.3 | 13 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8644 | 4 | 12 | 20 | 26 | 35 | 49 | 19.9 | 69 | 42.4 | 0 |
| 52020 | Kingston | 133 Dalton St. | 8694 | 0 | 9 | 19 | 27 | 37 | 58 | 19.1 | 91 | 55.0 | 8 |
| 56051 | Cornwall | Bedford/Third St. S., Memorial Park | 8158 | 8 | 17 | 24 | 30 | 39 | 56 | 24.0 | 73 | 61.3 | 0 |
| 59006 | Peterborough | 10 Hospital Dr. | 8647 | 9 | 21 | 28 | 35 | 45 | 68 | 28.1 | 106 | 60.0 | 17 |
| 62200 | Fort Frances | Armit Ave./4th St., Robert Moore P.S. | 7348 | 12 | 20 | 26 | 31 | 38 | 52 | 25.4 | 67 | 50.0 | 0 |
| 63200 | Thunder Bay | 615 James St. S., MTO | 8750 | 4 | 15 | 24 | 31 | 38 | 49 | 22.6 | 73 | 62.0 | 0 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 8395 | 6 | 17 | 25 | 32 | 41 | 58 | 24.8 | 82 | 65.7 | 1 |
| 75010 | North Bay | Chippawa St., Dept. National Defense | 8617 | 5 | 15 | 23 | 29 | 37 | 51 | 22.1 | 67 | 46.2 | 0 |
| 77203 | Sudbury | 100 Ramsey Lake Rd., Science North | 8470 | 10 | 20 | 26 | 32 | 41 | 57 | 26.1 | 95 | 52.9 | 1 |

*Notes:*

- ** *CN Tower site - measurements taken at 444 m above ground level*

## Table 13: Inhalable Particles (PM$_{10}$) Statistics (2000)

**Unit: micrograms per cubic metre (µg/m$^3$)**

**PM$_{10}$ 24-hour interim AAQC is 50 µg/m$^3$**

| | | | | PERCENTILES | | | | | | | Maximum | | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ID** | **City** | **Location** | **Valid h** | **10%** | **30%** | **50%** | **70%** | **90%** | **99%** | **Mean** | **1 h** | **24 h** | **Above Criterion** |
| 12016 | Windsor West | College/South St. | 8607 | 9 | 14 | 20 | 28 | 45 | 74 | 24.2 | 307 | 78.2 | 9 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 7826 | 5 | 9 | 14 | 22 | 37 | 60 | 18.1 | 267 | 49.3 | 0 |
| 15025 | London | 900 Highbury Ave. | 8139 | 6 | 10 | 15 | 21 | 34 | 57 | 17.9 | 127 | 47.8 | 0 |
| 29565 | Hamilton | Homeside II | 2039 | 10 | 17 | 23 | 33 | 51 | 102 | INS | 221 | 56.8 | 5 |
| 29567 | Hamilton | Niagara/Land St. | 7453 | 6 | 14 | 22 | 34 | 61 | 129 | 29.5 | 262 | 81.7 | 27 |
| 33003 | Toronto East | Kennedy/Lawrence | 8488 | 6 | 10 | 15 | 21 | 35 | 62 | 18.3 | 125 | 47.8 | 0 |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 8721 | 7 | 11 | 16 | 23 | 36 | 60 | 19.2 | 112 | 54.1 | 1 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8027 | 8 | 14 | 20 | 28 | 44 | 78 | 23.7 | 158 | 74.9 | 4 |
| 44008 | Burlington | HWY 2/North Shore Blvd. E. | 8351 | 6 | 10 | 15 | 21 | 34 | 53 | 17.7 | 104 | 44.7 | 0 |
| 48002 | York Region | HWY 47/E. of HWY 48 | 8609 | 5 | 9 | 13 | 19 | 33 | 56 | 16.3 | 192 | 50.5 | 1 |
| 59006 | Peterborough | 10 Hospital Dr. | 8402 | 4 | 8 | 11 | 16 | 28 | 49 | 14.2 | 182 | 42.2 | 0 |
| 71068 | Sault Ste. Marie | Patrick St., Wm. Merrifield School | 8628 | 4 | 8 | 11 | 18 | 36 | 102 | 17.5 | 190 | 79.4 | 12 |

*Notes:*

*- Measurements taken by Tapered Element Oscillating Microbalance (TEOM) sampler*

## Table 14: Respirable Particles ($PM_{2.5}$) Statistics (2000)

**Unit: micrograms per cubic metre (µg/m$^3$)**

**$PM_{2.5}$ 24-hour proposed (CWS) uses Canada-Wide Standard: 30 µg/m$^3$**

| ID | City | Location | Valid h | PERCENTILES | | | | | | Mean | Maximum | | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10% | 30% | 50% | 70% | 90% | 99% | | 1 h | 24 h | Above Criterion |
| 12009 | Windsor | Tecumseh Water Treatment Plant | 8499 | 1 | 4 | 8 | 12 | 21 | 39 | 9.8 | 83 | 42 | 3 |
| 14064 | Sarnia | Front St./CN Tracks, Centennial Park | 7484 | 0 | 3 | 6 | 12 | 23 | 41 | 9.5 | 84 | 36 | 3 |
| 18007 | Tiverton | Lot C/Concession 5, Visitor Info. Ctr. | 5570 | 0 | 2 | 4 | 8 | 18 | 34 | INS | 56 | 30 | 0 |
| 22071 | Simcoe | HWY 3/Blue Line Rd. | 7949 | 1 | 3 | 6 | 10 | 18 | 31 | 8.0 | 49 | 28 | 0 |
| 26060 | Kitchener | West Ave./Homewood | 7881 | 0 | 2 | 5 | 9 | 17 | 31 | 6.9 | 50 | 33 | 1 |
| 27067 | Niagara Region | Argyle Cres., Pump Stn. | 8463 | 0 | 3 | 6 | 10 | 17 | 31 | 7.8 | 52 | 28 | 0 |
| 28028 | Guelph | Exhibition/Clark St. | 3682 | 1 | 3 | 7 | 11 | 22 | 37 | INS | 61 | 38 | 1 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 8695 | 3 | 6 | 10 | 15 | 23 | 43 | 11.7 | 73 | 36 | 4 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 7295 | 0 | 3 | 6 | 11 | 20 | 34 | 8.5 | 80 | 28 | 0 |
| 31103 | Toronto Downtown | Bay/Wellesley | 6396 | 1 | 4 | 6 | 11 | 20 | 34 | 8.8 | 61 | 32 | 1 |
| 34020 | Toronto North | Yonge St./Finch Ave. | 8635 | 1 | 3 | 6 | 10 | 19 | 34 | 8.3 | 74 | 36 | 1 |
| 35033 | Etobicoke | Evans/Arnold Ave. | 8555 | 1 | 4 | 7 | 12 | 21 | 36 | 9.5 | 61 | 33 | 1 |
| 45025 | Oshawa | Ritson Rd./Olive Ave., Ritson Rd. P.S. | 8529 | 1 | 3 | 6 | 10 | 19 | 35 | 8.4 | 55 | 34 | 3 |
| 46089 | Brampton | 525 Main St. N., Peel Manor | 4408 | 0 | 3 | 6 | 11 | 21 | 35 | INS | 55 | 36 | 1 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 8717 | 1 | 4 | 7 | 11 | 19 | 34 | 8.8 | 57 | 31 | 2 |
| 49010 | Haliburton | HWY 117/Paint Lake Rd. | 8444 | 0 | 1 | 3 | 6 | 13 | 29 | 5.2 | 84 | 28 | 0 |
| 51001 | Ottawa | Rideau/Wurtemburg St. | 8651 | 0 | 3 | 5 | 8 | 14 | 27 | 6.3 | 50 | 31 | 1 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 8597 | 0 | 3 | 6 | 13 | 28 | 63 | 11.1 | 170 | 55 | 22 |
| 75010 | North Bay | Chippawa St., Dept. National Defense | 6599 | 0 | 1 | 3 | 6 | 13 | 25 | 5.0 | 41 | 22 | 0 |

*Notes:*

- *Measurements taken by Tapered Element Oscillating Microbalance (TEOM) sampler.*
- *$PM_{2.5}$ data has undergone final QA/QC since the publication of the 2000 Air Quality in Ontario report and the statistics contained in the above table reflect the final results.*

## Table 15: Mercury (Hg) Statistics (2000)

**Unit: nanograms per cubic metre (ng/m$^3$)**

**Hg 1-hour AAQC is 5000 ng/m$^3$**

| ID | City | Location | Valid h | PERCENTILES | | | | | | Mean | 1h | 24h | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10% | 30% | 50% | 70% | 90% | 99% | | | | Above Criterion |
| 35003 | Toronto West | Elmcrest Rd., Centennial Park | 7322 | 1.62 | 1.88 | 2.05 | 2.27 | 2.90 | 5.61 | 2.26 | 50.43 | 8.98 | 0 |
| 46110 | Mississauga | Queensway W./Hurontario St. | 7771 | 1.35 | 1.65 | 1.85 | 2.07 | 2.72 | 5.22 | 2.03 | 27.68 | 11.36 | 0 |

## Table 16: Total Suspended Particulate (TSP) Statistics (2000)

**Unit: micrograms per cubic metre (µg/m$^3$)**

**TSP 24-hour AAQC is 120 µg/m$^3$**

**TSP 1-year AAQC is 60 µg/m$^3$**

| ID | City | Location | # of Samples | PERCENTILES 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean | # of Times Above Criteria 24h | 1y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11001 | St. Marys | 309 Thomas St. | 53 | 16 | 28 | 45 | 66 | 104 | 155 | 184 | 55.9 | 44.9 | 3 | 0 |
| 12007 | Windsor | Wright/Water St. | 47 | 25 | 56 | 64 | 82 | 133 | 220 | 254 | 76.7 | 64.8 | 6 | 1 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 32 | 47 | 56 | 68 | 97 | 142 | 146 | 62.2 | 56.7 | 2 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 35 | 48 | 62 | 74 | 112 | 178 | 203 | 68.1 | 60.8 | 4 | 1 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 31 | 46 | 64 | 80 | 144 | 320 | 325 | 79.4 | 65.2 | 7 | 1 |
| 12016 | Windsor West | College/South St. | 53 | 35 | 57 | 67 | 87 | 125 | 209 | 226 | 77.9 | 69.1 | 6 | 1 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 37 | 55 | 72 | 86 | 143 | 226 | 230 | 81.8 | 71.8 | 8 | 1 |
| 12058 | Windsor | Columbus Ctr. | 58 | 31 | 42 | 50 | 62 | 81 | 162 | 186 | 55.6 | 48.6 | 2 | 0 |
| 12061 | Windsor | City Yard | 53 | 28 | 45 | 54 | 66 | 93 | 136 | 138 | 58.8 | 52.5 | 2 | 0 |
| 14016 | Courtright | HWY40 (opposite OPG) | 48 | 24 | 37 | 46 | 61 | 85 | 101 | 106 | 51.8 | 47.0 | 0 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 23 | 32 | 39 | 54 | 80 | 175 | 215 | 49.7 | 42.1 | 2 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 14 | 27 | 34 | 43 | 61 | 80 | 85 | 36.7 | 31.9 | 0 | 0 |
| 17014 | Beachville | Cyanamide Rd., Gordon Prop | 40 | 28 | 39 | 55 | 67 | 103 | 151 | 170 | 59.8 | 52.5 | 2 | 0 |
| 17015 | Beachville | 26 Vine St., MOE Trailer | 44 | 26 | 45 | 55 | 67 | 119 | 137 | 138 | 61.9 | 54.2 | 5 | 0 |
| 17020 | Ingersoll | HWY 2/R.R. 2, J Spriel Prop | 48 | 29 | 46 | 57 | 71 | 117 | 169 | 189 | 65.7 | 57.5 | 3 | 0 |
| 17021 | Embro | Oxford City Rd. 6, Hesston Farm | 51 | 30 | 50 | 68 | 103 | 135 | 148 | 150 | 79.0 | 68.7 | 12 | 1 |
| 17215 | Beachville | 26 Vine St., MOE Trailer | 47 | 51 | 74 | 87 | 106 | 137 | 184 | 194 | 91.6 | 83.3 | 9 | 1 |
| 17315 | Beachville | 26 Vine St., MOE Trailer | 42 | 24 | 44 | 57 | 61 | 107 | 124 | 126 | 59.8 | 52.9 | 2 | 0 |
| 22092 | Nanticoke | Rainham Rd./Sandusk Rd. | 56 | 19 | 29 | 37 | 46 | 73 | 145 | 202 | 43.5 | 37.2 | 1 | 0 |
| 22904 | Nanticoke | Sandusk Rd., Walpole South P.S. | 52 | 20 | 29 | 36 | 45 | 61 | 100 | 119 | 40.0 | 36.6 | 0 | 0 |
| 22907 | Nanticoke | Rainham Rd. (Near Stelco Gate) | 56 | 32 | 37 | 53 | 72 | 98 | 138 | 145 | 59.3 | 52.8 | 3 | 0 |
| 22964 | Nanticoke | N. 2 km Nanticoke OPG | 58 | 14 | 24 | 34 | 45 | 56 | 77 | 81 | 35.8 | 32.1 | 0 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 38 | 44 | 58 | 71 | 88 | 125 | 135 | 61.5 | 57.8 | 1 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 31 | 38 | 50 | 63 | 90 | 130 | 131 | 56.7 | 51.1 | 3 | 0 |
| 27081 | Thorold | Beaverdams/Collier | 54 | 20 | 27 | 34 | 48 | 63 | 75 | 77 | 38.6 | 35.4 | 0 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 30 | 41 | 49 | 65 | 97 | 233 | 242 | 63.8 | 54.8 | 4 | 0 |
| 29000 | Hamilton Downtown | Elgin/Kelly | 60 | 28 | 37 | 52 | 65 | 97 | 128 | 130 | 56.2 | 50.6 | 2 | 0 |
| 29009 | Hamilton | Kenilworth | 61 | 27 | 40 | 51 | 59 | 82 | 111 | 123 | 52.9 | 48.8 | 1 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 26 | 37 | 50 | 66 | 91 | 162 | 214 | 59.1 | 51.4 | 2 | 0 |
| 29012 | Hamilton | Burlington/Wellington | 55 | 25 | 36 | 46 | 59 | 86 | 105 | 106 | 49.7 | 44.8 | 0 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 33 | 46 | 57 | 72 | 98 | 145 | 155 | 63.4 | 58.6 | 2 | 0 |

## Table 16: Total Suspended Particulate (TSP) Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

TSP 24-hour AAQC is 120 µg/m$^3$

TSP 1-year AAQC is 60 µg/m$^3$

| ID | City | Location | # of Samples | 10% | PERCENTILES 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean | # of Times Above Criteria 24h | 1y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | 44.2 | 3 | 0 |
| 29113 | Hamilton | Gertrude/Depew | 53 | 42 | 59 | 88 | 124 | 179 | 294 | 348 | 103.3 | 87.8 | 17 | 1 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 19 | 30 | 40 | 52 | 75 | 92 | 93 | 44.7 | 39.7 | 0 | 0 |
| 29118 | Hamilton West | Main St. W./HWY 403 | 59 | 25 | 30 | 42 | 49 | 75 | 96 | 105 | 45.2 | 41.1 | 0 | 0 |
| 29119 | Hamilton | Morley St./Parkdale Ave. | 55 | 42 | 53 | 61 | 79 | 119 | 158 | 159 | 71.7 | 66.1 | 6 | 1 |
| 29122 | Hamilton | Dundurn/York | 54 | 21 | 26 | 35 | 44 | 63 | 82 | 86 | 38.5 | 35.2 | 0 | 0 |
| 29143 | Hamilton | Keefer Court, MOE Lab | 59 | 41 | 56 | 66 | 74 | 108 | 151 | 168 | 71.4 | 66.7 | 3 | 1 |
| 31045 | Toronto | 51 Larchmount Ave., Bruce P.S. | 113 | 23 | 33 | 45 | 55 | 75 | 97 | 131 | 46.8 | 42.1 | 1 | 0 |
| 31058 | Toronto | Mosley/Leslie St. S. | 29 | 32 | 45 | 60 | 76 | 91 | 107 | 109 | INS | INS | 0 | 0 |
| 31065 | Toronto | 633 Eastern Ave., A.R. Clarke Co. | 105 | 26 | 41 | 50 | 62 | 81 | 124 | 130 | 53.8 | 48.4 | 2 | 0 |
| 31082 | Toronto | 138 Hamilton Ave., Works Dept. | 115 | 36 | 46 | 60 | 74 | 102 | 131 | 155 | 64.0 | 58.5 | 4 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 29 | 33 | 41 | 52 | 58 | 77 | 126 | 133 | INS | INS | 1 | 0 |
| 46047 | Mississauga | 2360 Dixie Rd. | 56 | 38 | 48 | 60 | 75 | 90 | 142 | 149 | 65.2 | 60.6 | 2 | 1 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 54 | 13 | 22 | 29 | 35 | 45 | 87 | 92 | 31.5 | 27.6 | 0 | 0 |
| 63046 | Thunder Bay | Montreal St., Bombardier | 24 | 17 | 20 | 32 | 54 | 68 | 106 | 116 | INS | INS | 0 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 22 | 36 | 55 | 91 | 160 | 256 | 267 | 76.4 | 57.6 | 9 | 0 |
| 72114 | Hearst | George St./6th St. | 44 | 23 | 49 | 84 | 126 | 215 | 398 | 415 | 110.7 | 79.1 | 15 | 1 |

## Table 17: Lead (Pb) in TSP Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

Pb 24-hour AAQC is 2.0 µg/m$^3$

|  |  |  | # of | PERCENTILES |  |  |  |  |  |  | Arith. | Geom. | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Mean | Mean | Above Criterion |
| 12007 | Windsor | Wright/Water St. | 48 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.01 | 0.01 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.04 | 0.02 | 0.02 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.05 | 0.06 | 0.02 | 0.01 | 0 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.08 | 0.12 | 0.02 | 0.02 | 0 |
| 12016 | Windsor West | College/South St. | 53 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.01 | 0.01 | 0 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 0.01 | 0.01 | 0.01 | 0.02 | 0.05 | 0.12 | 0.13 | 0.02 | 0.02 | 0 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.01 | 0.01 | 0 |
| 12061 | Windsor | City Yard | 48 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 | 0.01 | 0.01 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 | 0.01 | 0.01 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 | 0.01 | 0.01 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 | 0.01 | 0.01 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.01 | 0.01 | 0.01 | 0.01 | 0.03 | 0.04 | 0.04 | 0.01 | 0.01 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.01 | 0.01 | 0 |
| 27081 | Thorold | Beaverdams/Collier St. | 54 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | 0.01 | 0.01 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.05 | 0.06 | 0.01 | 0.01 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.01 | 0.01 | 0.01 | 0.02 | 0.05 | 0.10 | 0.15 | 0.02 | 0.02 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.06 | 0.07 | 0.02 | 0.02 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 0.01 | 0.01 | 0.01 | 0.02 | 0.05 | 0.07 | 0.08 | 0.02 | 0.02 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 | 0.01 | 0.01 | 0 |
| 31045 | Toronto | 51 Larchmount Ave., Bruce P.S. | 113 | 0.01 | 0.01 | 0.01 | 0.02 | 0.04 | 0.08 | 0.39 | 0.02 | 0.02 | 0 |
| 31058 | Toronto | Mosley/Leslie St. | 29 | 0.01 | 0.03 | 0.04 | 0.06 | 0.10 | 0.14 | 0.15 | INS | INS | 0 |
| 31065 | Toronto | 633 Eastern Ave., A.R. Clarke Co. | 105 | 0.01 | 0.01 | 0.03 | 0.04 | 0.10 | 0.50 | 5.70 | 0.10 | 0.03 | 1 |
| 31082 | Toronto | 138 Hamilton Ave., Works Dept. | 117 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.08 | 0.28 | 0.02 | 0.01 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.08 | 0.09 | INS | INS | 0 |
| 46047 | Mississauga | Mississauga Rd. S./Port St. | 56 | 0.21 | 0.31 | 0.70 | 1.46 | 3.52 | 12.58 | 16.00 | 1.70 | 0.83 | 14 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.01 | 0.01 | 0.01 | 0.01 | 0.03 | 0.05 | 0.06 | 0.02 | 0.01 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.44 | 0.89 | 0.03 | 0.01 | 0 |

## Table 18: Iron (Fe) in TSP Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| ID | City | Location | # of Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | PERCENTILES | | | | | | | |
| 12007 | Windsor | Wright/Water St. | 48 | 0.4 | 1.0 | 1.7 | 2.3 | 3.6 | 4.3 | 4.3 | 1.81 | 1.38 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.4 | 0.6 | 0.8 | 1.4 | 1.9 | 3.1 | 3.2 | 1.08 | 0.87 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.6 | 0.8 | 1.1 | 1.7 | 2.7 | 5.3 | 6.2 | 1.53 | 1.21 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.3 | 0.8 | 1.5 | 2.2 | 4.8 | 10.6 | 13.0 | 2.22 | 1.34 |
| 12016 | Windsor West | College/South St. | 53 | 0.5 | 0.9 | 1.4 | 1.8 | 3.7 | 5.6 | 6.1 | 1.72 | 1.30 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 1.3 | 2.2 | 4.7 | 7.4 | 14.0 | 21.0 | 22.0 | 6.15 | 4.10 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.3 | 0.6 | 0.9 | 1.1 | 1.6 | 3.0 | 4.0 | 0.94 | 0.79 |
| 12061 | Windsor | City Yard | 48 | 0.5 | 0.8 | 1.2 | 1.8 | 2.5 | 3.4 | 3.8 | 1.38 | 1.14 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.1 | 0.2 | 0.4 | 0.5 | 0.8 | 2.1 | 2.6 | 0.47 | 0.35 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.1 | 0.2 | 0.3 | 0.5 | 1.0 | 2.1 | 2.6 | 0.47 | 0.32 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 | 0.9 | 1.0 | 0.32 | 0.26 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.4 | 0.6 | 0.8 | 0.9 | 1.4 | 2.2 | 2.5 | 0.84 | 0.74 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.4 | 0.6 | 1.0 | 1.7 | 3.2 | 6.5 | 9.9 | 1.51 | 1.05 |
| 27081 | Thorold | Beaverdams/Collier St. | 54 | 0.1 | 0.2 | 0.3 | 0.5 | 0.8 | 1.2 | 1.3 | 0.41 | 0.32 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.3 | 0.5 | 0.6 | 0.9 | 1.5 | 2.7 | 3.1 | 0.79 | 0.64 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.9 | 1.5 | 2.1 | 3.5 | 6.0 | 9.5 | 11.0 | 2.85 | 2.21 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.6 | 0.9 | 1.2 | 2.8 | 4.9 | 7.2 | 7.3 | 2.14 | 1.48 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 0.3 | 0.9 | 2.0 | 3.1 | 4.5 | 7.1 | 7.2 | 2.37 | 1.57 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.1 | 0.3 | 0.5 | 1.0 | 1.6 | 4.4 | 4.7 | 0.83 | 0.51 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.5 | 0.7 | 1.1 | 1.4 | 1.9 | 6.6 | 8.3 | 1.32 | 0.98 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.1 | 0.2 | 0.3 | 0.4 | 0.6 | 0.9 | 1.0 | 0.32 | 0.26 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.8 | 1.8 | 2.9 | 5.2 | 10.3 | 42.3 | 56.0 | 5.92 | 3.06 |

## Table 19: Manganese (Mn) in TSP Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

Mn 24-hour AAQC is 2.5 µg/m$^3$

| ID | City | Location | # of Samples | PERCENTILES 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean | # of Times Above Criterion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12007 | Windsor | Wright/Water St. | 48 | 0.006 | 0.027 | 0.044 | 0.068 | 0.100 | 0.146 | 0.170 | 0.052 | 0.036 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.011 | 0.017 | 0.024 | 0.041 | 0.058 | 0.134 | 0.150 | 0.034 | 0.026 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.016 | 0.026 | 0.047 | 0.070 | 0.166 | 0.325 | 0.330 | 0.076 | 0.048 | 0 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.012 | 0.027 | 0.068 | 0.110 | 0.240 | 0.739 | 0.790 | 0.124 | 0.055 | 0 |
| 12016 | Windsor West | College/South St. | 53 | 0.011 | 0.026 | 0.047 | 0.058 | 0.100 | 0.174 | 0.190 | 0.053 | 0.038 | 0 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 0.023 | 0.032 | 0.064 | 0.100 | 0.176 | 0.313 | 0.370 | 0.088 | 0.064 | 0 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.005 | 0.013 | 0.022 | 0.027 | 0.046 | 0.087 | 0.110 | 0.025 | 0.018 | 0 |
| 12061 | Windsor | City Yard | 48 | 0.013 | 0.020 | 0.035 | 0.044 | 0.072 | 0.106 | 0.120 | 0.038 | 0.030 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.001 | 0.003 | 0.007 | 0.010 | 0.018 | 0.049 | 0.052 | 0.009 | 0.006 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.002 | 0.005 | 0.008 | 0.015 | 0.044 | 0.057 | 0.058 | 0.015 | 0.009 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.002 | 0.006 | 0.010 | 0.013 | 0.018 | 0.042 | 0.043 | 0.012 | 0.008 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.016 | 0.026 | 0.033 | 0.045 | 0.067 | 0.117 | 0.140 | 0.039 | 0.033 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.014 | 0.038 | 0.056 | 0.120 | 0.190 | 0.396 | 0.520 | 0.091 | 0.059 | 0 |
| 27081 | Thorold | Beaverdams/Collier St. | 54 | 0.003 | 0.009 | 0.013 | 0.020 | 0.039 | 0.061 | 0.063 | 0.019 | 0.013 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.010 | 0.021 | 0.027 | 0.044 | 0.073 | 0.315 | 0.470 | 0.046 | 0.029 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.061 | 0.100 | 0.140 | 0.200 | 0.350 | 0.654 | 0.690 | 0.185 | 0.148 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.039 | 0.073 | 0.091 | 0.206 | 0.394 | 1.910 | 2.200 | 0.232 | 0.126 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 0.017 | 0.074 | 0.130 | 0.179 | 0.283 | 0.339 | 0.350 | 0.137 | 0.089 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.003 | 0.013 | 0.020 | 0.049 | 0.110 | 0.361 | 0.590 | 0.050 | 0.023 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.018 | 0.026 | 0.030 | 0.042 | 0.067 | 0.103 | 0.110 | INS | INS | 0 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.001 | 0.006 | 0.012 | 0.016 | 0.028 | 0.038 | 0.040 | 0.013 | 0.009 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.037 | 0.110 | 0.160 | 0.294 | 0.544 | 1.049 | 1.200 | 0.248 | 0.153 | 0 |

## Table 20: Nickel (Ni) in TSP Statistics (2000)

**Unit: micrograms per cubic metre (µg/m$^3$)**

**Ni 24-hour AAQC is 2.0 µg/m$^3$**

| | | | # of | | PERCENTILES | | | | | | Arith. | Geom. | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ID** | **City** | **Location** | **Samples** | **10%** | **30%** | **50%** | **70%** | **90%** | **99%** | **Max.** | **Mean** | **Mean** | **Above Criteria** |
| 12007 | Windsor | Wright/Water St. | 48 | 0.001 | 0.001 | 0.001 | 0.001 | 0.004 | 0.011 | 0.013 | 0.002 | 0.001 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.008 | 0.012 | 0.001 | 0.001 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.025 | 0.027 | 0.002 | 0.001 | 0 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.001 | 0.001 | 0.001 | 0.001 | 0.006 | 0.010 | 0.011 | 0.002 | 0.002 | 0 |
| 12016 | Windsor West | College/South St. | 53 | 0.001 | 0.001 | 0.001 | 0.001 | 0.003 | 0.009 | 0.012 | 0.002 | 0.001 | 0 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 0.001 | 0.001 | 0.001 | 0.004 | 0.012 | 0.028 | 0.031 | 0.005 | 0.002 | 0 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.006 | 0.007 | 0.002 | 0.001 | 0 |
| 12061 | Windsor | City Yard | 48 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.011 | 0.016 | 0.001 | 0.001 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.001 | 0.001 | 0.001 | 0.002 | 0.015 | 0.041 | 0.042 | 0.006 | 0.002 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.001 | 0.001 | 0.001 | 0.001 | 0.004 | 0.014 | 0.017 | 0.002 | 0.001 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.001 | 0.001 | 0.001 | 0.001 | 0.007 | 0.008 | 0.008 | 0.002 | 0.001 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.015 | 0.018 | 0.002 | 0.001 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.001 | 0.001 | 0.001 | 0.001 | 0.003 | 0.008 | 0.011 | 0.002 | 0.001 | 0 |
| 27081 | Thorold | Beaverdams/Collier St. | 54 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.006 | 0.008 | 0.001 | 0.001 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.008 | 0.009 | 0.002 | 0.001 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.001 | 0.001 | 0.001 | 0.002 | 0.006 | 0.009 | 0.010 | 0.002 | 0.002 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.012 | 0.013 | 0.002 | 0.001 | 0 |
| 29102 | Hamilton | 467 Beach Blvd | 57 | 0.001 | 0.001 | 0.001 | 0.001 | 0.003 | 0.007 | 0.007 | 0.002 | 0.001 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.007 | 0.008 | 0.001 | 0.001 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.001 | 0.001 | 0.001 | 0.001 | 0.006 | 0.009 | 0.009 | INS | INS | 0 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.012 | 0.013 | 0.002 | 0.001 | 0 |

## Table 21: Chromium (Cr) in TSP Statistics (2000)

**Unit: micrograms per cubic metre (μg/m$^3$)**

**Cr 24-hour AAQC is 1.5 μg/m$^3$**

| | | | # of | | P E R C E N T I L E S | | | | | | Arith. | Geom. | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Mean | Mean | Above Criterion |
| 12007 | Windsor | Wright/Water St. | 48 | 0.001 | 0.002 | 0.006 | 0.009 | 0.013 | 0.019 | 0.019 | 0.007 | 0.004 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.001 | 0.001 | 0.003 | 0.005 | 0.008 | 0.012 | 0.013 | 0.004 | 0.003 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.001 | 0.002 | 0.003 | 0.007 | 0.012 | 0.038 | 0.045 | 0.006 | 0.004 | 0 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.001 | 0.001 | 0.006 | 0.012 | 0.023 | 0.059 | 0.069 | 0.011 | 0.005 | 0 |
| 12016 | Windsor West | College/South St. | 53 | 0.001 | 0.001 | 0.003 | 0.006 | 0.014 | 0.019 | 0.020 | 0.005 | 0.003 | 0 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 0.002 | 0.009 | 0.018 | 0.035 | 0.057 | 0.097 | 0.098 | 0.026 | 0.014 | 0 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.001 | 0.001 | 0.001 | 0.003 | 0.005 | 0.010 | 0.010 | 0.003 | 0.002 | 0 |
| 12061 | Windsor | City Yard | 48 | 0.001 | 0.003 | 0.006 | 0.008 | 0.012 | 0.023 | 0.026 | 0.006 | 0.005 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.001 | 0.001 | 0.001 | 0.002 | 0.004 | 0.009 | 0.009 | 0.002 | 0.001 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.001 | 0.001 | 0.001 | 0.002 | 0.006 | 0.013 | 0.014 | 0.003 | 0.002 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.001 | 0.001 | 0.001 | 0.001 | 0.003 | 0.007 | 0.007 | 0.002 | 0.001 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.008 | 0.015 | 0.021 | 0.026 | 0.049 | 0.061 | 0.062 | 0.024 | 0.018 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.001 | 0.003 | 0.007 | 0.011 | 0.022 | 0.126 | 0.250 | 0.013 | 0.006 | 0 |
| 27081 | Thorold | Beaverdams/Collier St. | 54 | 0.001 | 0.001 | 0.001 | 0.003 | 0.009 | 0.018 | 0.020 | 0.004 | 0.002 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.006 | 0.019 | 0.044 | 0.096 | 0.243 | 0.417 | 0.450 | 0.088 | 0.039 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.007 | 0.014 | 0.019 | 0.028 | 0.045 | 0.150 | 0.230 | 0.027 | 0.019 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.001 | 0.004 | 0.008 | 0.024 | 0.058 | 0.187 | 0.210 | 0.024 | 0.009 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 0.001 | 0.004 | 0.011 | 0.019 | 0.033 | 0.043 | 0.047 | 0.014 | 0.008 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.001 | 0.001 | 0.002 | 0.006 | 0.016 | 0.040 | 0.041 | 0.007 | 0.003 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.003 | 0.006 | 0.011 | 0.016 | 0.025 | 0.066 | 0.074 | INS | INS | 0 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.001 | 0.001 | 0.001 | 0.003 | 0.008 | 0.024 | 0.025 | 0.004 | 0.002 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.001 | 0.002 | 0.011 | 0.018 | 0.045 | 0.132 | 0.180 | 0.020 | 0.008 | 0 |

## Table 22: Vanadium (V) in TSP Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

V 24-hour AAQC is 2.0 µg/m$^3$

| | | | # of | | P E R C E N T I L E S | | | | | | Arith. | Geom. | # of Times |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Mean | Mean | Above Criterion |
| 12007 | Windsor | Wright/Water St. | 48 | 0.001 | 0.001 | 0.001 | 0.004 | 0.014 | 0.019 | 0.020 | 0.004 | 0.002 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.001 | 0.001 | 0.001 | 0.003 | 0.010 | 0.020 | 0.024 | 0.004 | 0.002 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.001 | 0.001 | 0.001 | 0.004 | 0.012 | 0.021 | 0.022 | 0.004 | 0.002 | 0 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.001 | 0.001 | 0.001 | 0.008 | 0.018 | 0.033 | 0.037 | 0.006 | 0.003 | 0 |
| 12016 | Windsor West | College/South St. | 53 | 0.001 | 0.001 | 0.001 | 0.001 | 0.011 | 0.023 | 0.025 | 0.004 | 0.002 | 0 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 0.001 | 0.001 | 0.005 | 0.014 | 0.032 | 0.045 | 0.047 | 0.011 | 0.005 | 0 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.001 | 0.001 | 0.001 | 0.001 | 0.006 | 0.012 | 0.014 | 0.002 | 0.001 | 0 |
| 12061 | Windsor | City Yard | 48 | 0.001 | 0.001 | 0.001 | 0.005 | 0.013 | 0.020 | 0.021 | 0.005 | 0.002 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.001 | 0.001 | 0.001 | 0.008 | 0.038 | 0.094 | 0.100 | 0.013 | 0.004 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.028 | 0.033 | 0.003 | 0.001 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.006 | 0.007 | 0.001 | 0.001 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.001 | 0.001 | 0.001 | 0.005 | 0.009 | 0.015 | 0.016 | 0.004 | 0.002 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.001 | 0.001 | 0.001 | 0.002 | 0.008 | 0.018 | 0.019 | 0.003 | 0.002 | 0 |
| 27081 | Thorold | Beaverdams/Collier | 54 | 0.001 | 0.001 | 0.001 | 0.001 | 0.004 | 0.007 | 0.008 | 0.002 | 0.001 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.001 | 0.001 | 0.001 | 0.001 | 0.007 | 0.015 | 0.017 | 0.003 | 0.002 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.001 | 0.001 | 0.004 | 0.007 | 0.015 | 0.026 | 0.031 | 0.006 | 0.003 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.001 | 0.001 | 0.001 | 0.003 | 0.010 | 0.025 | 0.030 | 0.004 | 0.002 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 0.001 | 0.001 | 0.001 | 0.001 | 0.008 | 0.024 | 0.033 | 0.003 | 0.002 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.001 | 0.001 | 0.001 | 0.001 | 0.005 | 0.014 | 0.015 | 0.002 | 0.001 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.001 | 0.001 | 0.001 | 0.002 | 0.008 | 0.017 | 0.019 | INS | INS | 0 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.001 | 0.001 | 0.001 | 0.001 | 0.004 | 0.024 | 0.025 | 0.003 | 0.001 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.001 | 0.001 | 0.002 | 0.010 | 0.028 | 0.082 | 0.110 | 0.011 | 0.004 | 0 |

## Table 23: Copper (Cu) in TSP Statistics (2000)

**Unit: micrograms per cubic metre (µg/m$^3$)**

**Cu 24-hour AAQC is 50 µg/m$^3$**

| ID | City | Location | # of Samples | PERCENTILES | | | | | | Max | Arith. Mean | Geom. Mean | # of Times Above Criterion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10% | 30% | 50% | 70% | 90% | 99% | | | | |
| 12007 | Windsor | Wright/Water St. | 48 | 0.002 | 0.018 | 0.031 | 0.069 | 0.122 | 0.298 | 0.360 | 0.059 | 0.030 | 0 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 0.001 | 0.003 | 0.009 | 0.016 | 0.022 | 0.032 | 0.032 | 0.011 | 0.006 | 0 |
| 12011 | Windsor | Drouillard Rd./Richmond St. | 47 | 0.001 | 0.001 | 0.003 | 0.008 | 0.016 | 0.055 | 0.078 | 0.008 | 0.004 | 0 |
| 12013 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 51 | 0.001 | 0.001 | 0.009 | 0.019 | 0.047 | 0.170 | 0.260 | 0.020 | 0.006 | 0 |
| 12016 | Windsor West | College/South St. | 53 | 0.001 | 0.001 | 0.017 | 0.028 | 0.041 | 0.092 | 0.100 | 0.021 | 0.009 | 0 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 0.010 | 0.022 | 0.035 | 0.047 | 0.065 | 0.100 | 0.120 | 0.038 | 0.029 | 0 |
| 12058 | Windsor | Columbus Ctr. | 54 | 0.002 | 0.033 | 0.065 | 0.116 | 0.180 | 0.225 | 0.230 | 0.082 | 0.044 | 0 |
| 12061 | Windsor | City Yard | 48 | 0.001 | 0.001 | 0.003 | 0.009 | 0.018 | 0.029 | 0.032 | 0.007 | 0.003 | 0 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 0.001 | 0.022 | 0.041 | 0.062 | 0.085 | 0.266 | 0.300 | 0.052 | 0.027 | 0 |
| 14030 | Corunna | R.R. 1 (W. of House) | 43 | 0.003 | 0.013 | 0.026 | 0.041 | 0.060 | 0.088 | 0.100 | 0.031 | 0.020 | 0 |
| 15025 | London | 900 Highbury Ave. | 50 | 0.027 | 0.260 | 0.460 | 1.100 | 1.600 | 2.000 | 2.000 | 0.743 | 0.404 | 0 |
| 27052 | Thorold | 185 Queen St. S. | 57 | 0.036 | 0.079 | 0.103 | 0.140 | 0.213 | 0.284 | 0.290 | 0.120 | 0.084 | 0 |
| 27057 | St. Catharines | 27 Plymouth Ave. | 59 | 0.022 | 0.053 | 0.087 | 0.133 | 0.170 | 0.214 | 0.220 | 0.098 | 0.075 | 0 |
| 27081 | Thorold | Beaverdams/Collier St. | 54 | 0.001 | 0.023 | 0.047 | 0.065 | 0.105 | 0.201 | 0.260 | 0.054 | 0.030 | 0 |
| 27082 | Niagara Falls | 7401 Portage Rd. | 47 | 0.021 | 0.052 | 0.079 | 0.110 | 0.160 | 0.235 | 0.240 | 0.090 | 0.061 | 0 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 0.001 | 0.016 | 0.024 | 0.039 | 0.058 | 0.087 | 0.095 | 0.030 | 0.018 | 0 |
| 29025 | Hamilton | Barton/Sanford | 58 | 0.032 | 0.096 | 0.130 | 0.180 | 0.270 | 0.353 | 0.440 | 0.147 | 0.113 | 0 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 0.001 | 0.008 | 0.023 | 0.043 | 0.063 | 0.087 | 0.088 | 0.029 | 0.013 | 0 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 0.004 | 0.013 | 0.020 | 0.026 | 0.051 | 0.091 | 0.110 | 0.025 | 0.018 | 0 |
| 44009 | Burlington | 3900 Mainway Blvd. | 30 | 0.006 | 0.017 | 0.032 | 0.044 | 0.066 | 0.091 | 0.098 | INS | INS | 0 |
| 46117 | Mississauga | Apple Lane, Meadow Park | 55 | 0.068 | 0.120 | 0.150 | 0.170 | 0.190 | 0.220 | 0.220 | 0.141 | 0.131 | 0 |
| 71042 | Sault Ste. Marie | Bonney St., Pumphouse | 58 | 0.001 | 0.013 | 0.028 | 0.039 | 0.072 | 0.108 | 0.120 | 0.033 | 0.019 | 0 |

## Table 24: Nitrate ($NO_3^-$) in TSP Statistics (2000)

Unit: micrograms per cubic metre (µg/m3)

| ID | City | Location | # of | PERCENTILES | | | | | | | Arith. | Geom. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Mean | Mean |
| 12007 | Windsor | Wright/Water St. | 48 | 1.60 | 2.90 | 4.90 | 6.60 | 9.60 | 13.00 | 13.10 | 5.30 | 4.30 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 2.20 | 4.00 | 5.60 | 6.90 | 8.70 | 13.80 | 14.50 | 5.80 | 5.00 |
| 12016 | Windsor West | College/South St. | 53 | 2.10 | 4.10 | 5.70 | 6.90 | 9.90 | 13.40 | 16.50 | 5.90 | 5.10 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 1.60 | 3.20 | 5.20 | 6.30 | 9.30 | 14.40 | 14.60 | 5.40 | 4.40 |
| 12058 | Windsor | Columbus Ctr. | 54 | 1.90 | 3.30 | 4.70 | 6.50 | 9.20 | 14.10 | 14.50 | 5.40 | 4.60 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 1.70 | 3.90 | 5.40 | 7.60 | 11.60 | 15.30 | 16.20 | 6.20 | 5.10 |
| 22904 | Nanticoke | Sandusk Rd., Walpole South P.S. | 54 | 1.80 | 3.40 | 4.60 | 7.40 | 10.70 | 16.20 | 18.80 | 5.90 | 4.70 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 1.00 | 1.70 | 2.70 | 3.60 | 6.20 | 9.20 | 11.10 | 3.20 | 2.60 |
| 29025 | Hamilton | Barton/Sanford | 58 | 1.60 | 3.20 | 4.70 | 6.00 | 7.50 | 12.40 | 13.80 | 4.90 | 4.20 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 1.00 | 2.10 | 3.50 | 5.40 | 7.30 | 10.30 | 11.40 | 4.00 | 3.10 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 1.50 | 2.30 | 4.20 | 5.70 | 9.80 | 13.90 | 15.10 | 4.90 | 4.00 |

## Table 25: Sulphate ($So_4^{2-}$) in TSP Statistics (2000)

Unit: micrograms per cubic metre (µg/m3)

| ID | City | Location | # of | PERCENTILES | | | | | | | Arith. | Geom. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Mean | Mean |
| 12007 | Windsor | Wright/Water St. | 48 | 11.30 | 14.70 | 16.80 | 18.30 | 22.40 | 36.90 | 37.70 | 17.30 | 16.50 |
| 12008 | Windsor Downtown | 467 University Ave. W. | 53 | 10.20 | 14.00 | 16.00 | 17.30 | 23.50 | 29.10 | 30.00 | 16.40 | 15.50 |
| 21016 | Windsor West | College/South St. | 53 | 9.90 | 15.20 | 16.30 | 19.60 | 24.10 | 30.00 | 30.20 | 17.20 | 16.20 |
| 12038 | Windsor | 2885 Howard Ave. | 52 | 9.90 | 13.30 | 15.10 | 16.70 | 21.20 | 23.20 | 23.80 | 15.40 | 14.60 |
| 12058 | Windsor | Columbus Ctr. | 54 | 9.50 | 13.40 | 14.80 | 16.40 | 20.60 | 26.10 | 30.10 | 15.20 | 14.60 |
| 14016 | Courtright | HWY 40 (opposite OPG) | 48 | 9.40 | 13.60 | 16.20 | 17.60 | 22.90 | 28.00 | 28.40 | 16.30 | 15.50 |
| 22904 | Nanticoke | Sandusk Rd., Walpole South P.S. | 54 | 7.30 | 10.70 | 15.30 | 17.00 | 23.20 | 35.70 | 42.70 | 15.20 | 13.60 |
| 29011 | Hamilton | Burlington/Leeds | 60 | 5.40 | 9.90 | 13.60 | 17.00 | 19.40 | 23.10 | 23.50 | 13.20 | 11.90 |
| 29025 | Hamilton | Barton/Sanford | 58 | 8.40 | 11.70 | 14.60 | 18.10 | 21.30 | 26.80 | 29.20 | 15.00 | 14.00 |
| 29102 | Hamilton | 467 Beach Blvd. | 57 | 6.40 | 12.60 | 15.10 | 18.20 | 22.30 | 26.40 | 28.30 | 15.20 | 13.60 |
| 29114 | Hamilton Mountain | Vickers Rd./East 18th St. | 52 | 8.30 | 10.50 | 12.60 | 16.10 | 18.60 | 23.30 | 23.60 | 13.50 | 12.70 |

## Table 26: Inhalable Particles ($PM_{10}$) 24-Hour Statistics (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

$PM_{10}$ 24-hour Interim AAQC is 50 $\mu g/m^3$

| ID | City | Location | # of Samples | PERCENTILES 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean | % of Times Above Criterion |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12507 | Windsor | Wright/Water St. | 57 | 14.0 | 19.0 | 25.0 | 32.0 | 48.0 | 98.0 | 146.0 | 29.5 | 25.4 | 8.8 |
| 12508 | Windsor Downtown | 467 University Ave. W. | 55 | 13.0 | 20.0 | 28.0 | 34.0 | 50.0 | 69.0 | 82.0 | 29.5 | 26.2 | 10.9 |
| 12513 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 49 | 13.0 | 19.0 | 25.0 | 36.0 | 52.0 | 88.0 | 91.0 | 31.1 | 26.5 | 12.2 |
| 12556 | Windsor | 1400 Roselawn Dr., St. Gabriel S.S. | 56 | 11.0 | 15.0 | 19.0 | 24.0 | 37.0 | 50.0 | 57.0 | 21.7 | 19.3 | 1.8 |
| 12559 | Windsor | 5305 Adstol Ave., St. Alexander S.S. | 46 | 10.0 | 15.0 | 20.0 | 29.0 | 40.0 | 54.0 | 60.0 | 23.4 | 20.3 | 2.2 |
| 12583 | Windsor | 13765 St. Gregory's Rd., St. Gregory's S.S. | 54 | 9.0 | 16.0 | 21.0 | 26.0 | 35.0 | 61.0 | 71.0 | 23.0 | 20.3 | 3.7 |
| 14550 | Sarnia | 6th Line, Moore Township | 55 | 7.0 | 11.0 | 15.0 | 22.0 | 31.0 | 39.0 | 41.0 | 17.8 | 15.1 | 0.0 |
| 14564 | Sarnia | Front St./CN Tracks, Centenial Park | 58 | 10.0 | 13.0 | 16.0 | 25.0 | 34.0 | 40.0 | 41.0 | 19.9 | 17.7 | 0.0 |
| 15525 | London | 900 Highbury Ave. E. | 51 | 7.0 | 12.0 | 15.0 | 19.0 | 28.0 | 41.0 | 44.0 | 16.7 | 14.9 | 0.0 |
| 17550 | Beachville | Earl Lantz Property | 46 | 11.0 | 20.0 | 26.0 | 35.0 | 48.0 | 80.0 | 93.0 | 29.3 | 25.4 | 6.5 |
| 22304 | Nanticoke | Sandusk Rd., Walpole South P.S. | 57 | 6.0 | 10.0 | 12.0 | 19.0 | 26.0 | 43.0 | 48.0 | 15.5 | 13.3 | 0.0 |
| 27308 | St. Catharines | 71 King St. | 59 | 12.0 | 18.0 | 21.0 | 25.0 | 38.0 | 48.0 | 49.0 | 22.9 | 21.0 | 0.0 |
| 27352 | Thorold | 185 Queen St. S. | 53 | 12.0 | 17.0 | 22.0 | 24.0 | 36.0 | 43.0 | 45.0 | 22.4 | 20.6 | 0.0 |
| 29300 | Hamilton Downtown | Elgin/Kelly St. | 58 | 13.0 | 16.0 | 23.0 | 28.0 | 42.0 | 67.0 | 71.0 | 25.3 | 22.5 | 5.2 |
| 29302 | Hamilton | 467 Beach Blvd. | 58 | 10.0 | 17.0 | 22.0 | 29.0 | 38.0 | 73.0 | 76.0 | 25.2 | 21.7 | 5.2 |
| 29313 | Hamilton | Gertrude/Depew St. | 54 | 16.0 | 23.0 | 28.0 | 52.0 | 72.0 | 91.0 | 97.0 | 38.7 | 32.8 | 31.5 |
| 29314 | Hamilton Mountain | Vickers Rd./East 18th St. | 53 | 10.0 | 15.0 | 18.0 | 24.0 | 33.0 | 48.0 | 57.0 | 20.6 | 18.7 | 1.9 |
| 35127 | Etobicoke | Evans/Arnold Cres. | 59 | 12.0 | 16.0 | 22.0 | 27.0 | 44.0 | 62.0 | 80.0 | 25.0 | 21.3 | 1.7 |
| 44127 | Oakville | Bronte Rd./Woburn Cres. | 54 | 11.0 | 16.0 | 18.0 | 22.0 | 32.0 | 74.0 | 99.0 | 21.5 | 19.1 | 3.7 |
| 46127 | Mississauga | Apple Lane, Meadow Park | 58 | 10.0 | 12.0 | 14.0 | 19.0 | 27.0 | 37.0 | 40.0 | 16.7 | 15.3 | 0.0 |
| 62201 | Fort Frances | Armit Ave./4th St. | 49 | 6.0 | 10.0 | 14.0 | 18.0 | 29.0 | 44.0 | 44.0 | 15.9 | 13.4 | 0.0 |
| 63201 | Thunder Bay | James/Walsh St. | 61 | 6.0 | 11.0 | 14.0 | 18.0 | 23.0 | 34.0 | 35.0 | 14.9 | 13.2 | 0.0 |
| 71342 | Sault Ste. Marie | Bonney St., Pumphouse | 60 | 7.0 | 15.0 | 22.0 | 38.0 | 63.0 | 129.0 | 138.0 | 32.5 | 22.9 | 21.7 |
| 71368 | Sault Ste. Marie | Patrick St., Wm. Merrifield P.S. | 61 | 6.0 | 9.0 | 14.0 | 19.0 | 29.0 | 65.0 | 73.0 | 16.9 | 13.6 | 3.3 |
| 77326 | Sudbury | 19 Lisgar St. | 49 | 7.0 | 12.0 | 15.0 | 16.0 | 26.0 | 63.0 | 76.0 | 16.6 | 12.6 | 2.0 |
| 77570 | Copper Cliff | Market St. | 59 | 7.0 | 10.0 | 12.0 | 15.0 | 23.0 | 42.0 | 59.0 | 14.4 | 12.9 | 1.7 |

## Table 27: Copper (Cu) in $PM_{10}$ Statistics (2000)

Unit: micrograms per cubic metre (µg/$m^3$)

| ID | City | Location | # of Samples | PERCENTILES 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12507 | Windsor | Wright/Water St. | 57 | 0.005 | 0.005 | 0.005 | 0.010 | 0.015 | 0.060 | 0.080 | 0.010 | 0.008 |
| 12508 | Windsor Downtown | 467 University Ave. W. | 55 | 0.005 | 0.005 | 0.005 | 0.015 | 0.023 | 0.037 | 0.040 | 0.011 | 0.009 |
| 12513 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 49 | 0.005 | 0.005 | 0.005 | 0.007 | 0.015 | 0.030 | 0.030 | 0.008 | 0.007 |
| 12556 | Windsor | 1400 Roselawn Dr., St. Gabriel S.S. | 56 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.015 | 0.015 | 0.006 | 0.006 |
| 12559 | Windsor | 5305 Adstol Ave., St. Alexander S.S | 46 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.013 | 0.015 | 0.006 | 0.006 |
| 12583 | Windsor | 13765 St. Gregory's Rd., St. Gregory's S.S. | 54 | 0.005 | 0.005 | 0.005 | 0.005 | 0.013 | 0.020 | 0.020 | 0.007 | 0.006 |
| 14550 | Sarnia | 6th Line, Moore Township | 55 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| 14564 | Sarnia | Front St./CN Tracks, Centenial Park | 58 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.015 | 0.015 | 0.006 | 0.006 |
| 15525 | London | 900 Highbury Ave. | 54 | 0.005 | 0.005 | 0.005 | 0.005 | 0.013 | 0.022 | 0.025 | 0.007 | 0.006 |
| 17550 | Beachville | Earl Lantz Property | 46 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.013 | 0.015 | 0.005 | 0.005 |
| 22304 | Nanticoke | Sandusk Rd., Walpole South P.S. | 57 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 |
| 27308 | St. Catharines | 71 King St. | 60 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.038 | 0.050 | 0.008 | 0.007 |
| 27352 | Thorold | 185 Queen St. S. | 53 | 0.005 | 0.005 | 0.010 | 0.015 | 0.025 | 0.049 | 0.065 | 0.013 | 0.010 |
| 29300 | Hamilton Downtown | Elgin/Kelly St. | 58 | 0.005 | 0.005 | 0.010 | 0.015 | 0.030 | 0.044 | 0.050 | 0.012 | 0.010 |
| 29302 | Hamilton | 467 Beach Blvd. | 58 | 0.005 | 0.005 | 0.005 | 0.010 | 0.016 | 0.043 | 0.055 | 0.010 | 0.008 |
| 29313 | Hamilton | Gertrude/Depew St. | 54 | 0.005 | 0.006 | 0.010 | 0.048 | 0.120 | 0.219 | 0.230 | 0.041 | 0.019 |
| 29314 | Hamilton Mountain | Vickers Rd./East 18th St. | 53 | 0.005 | 0.005 | 0.005 | 0.010 | 0.019 | 0.037 | 0.040 | 0.009 | 0.007 |
| 35127 | Etobicoke | Evans Ave./Arnold Cres. | 58 | 0.005 | 0.007 | 0.030 | 0.050 | 0.108 | 0.225 | 0.260 | 0.045 | 0.023 |
| 44127 | Oakville | Bronte Rd./Woburn Cres. | 58 | 0.005 | 0.005 | 0.015 | 0.035 | 0.055 | 0.062 | 0.065 | 0.023 | 0.015 |
| 46127 | Mississauga | Apple Lane, Meadow Park | 50 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.013 | 0.015 | 0.006 | 0.006 |
| 62201 | Fort Francis | Armit Ave./4th St. | 50 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.013 | 0.015 | 0.006 | 0.006 |
| 63201 | Thunder Bay | 615 James St. S./Walsh St. | 61 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.024 | 0.030 | 0.007 | 0.006 |
| 71342 | Sault Ste. Marie | Bonney St., Pumphouse | 61 | 0.005 | 0.005 | 0.005 | 0.005 | 0.010 | 0.017 | 0.020 | 0.007 | 0.006 |
| 71368 | Sault Ste. Marie | Patrick St., Wm. Merrifield P.S. | 61 | 0.005 | 0.005 | 0.005 | 0.005 | 0.020 | 0.046 | 0.055 | 0.009 | 0.007 |
| 77326 | Sudbury | 19 Lisgar St. | 45 | 0.005 | 0.005 | 0.010 | 0.070 | 0.230 | 0.447 | 0.550 | 0.077 | 0.024 |
| 77570 | Copper Cliff | Market St. | 59 | 0.010 | 0.035 | 0.070 | 0.226 | 0.747 | 1.828 | 2.300 | 0.259 | 0.087 |

## Table 28: Iron (Fe) in $PM_{10}$ Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| | | | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ID | City | Location | # of Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean |
| 12507 | Windsor | Wright/Water St. | 57 | 0.19 | 0.38 | 0.79 | 1.10 | 1.53 | 2.20 | 2.60 | 0.82 | 0.61 |
| 12508 | Windsor Downtown | 467 University Ave. W. | 55 | 0.18 | 0.33 | 0.54 | 0.91 | 1.25 | 1.84 | 2.00 | 0.68 | 0.52 |
| 12513 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 49 | 0.14 | 0.33 | 0.73 | 1.23 | 1.85 | 4.21 | 4.60 | 1.05 | 0.63 |
| 12556 | Windsor | 1400 Roselawn Dr., St. Gabriel S.S. | 56 | 0.12 | 0.20 | 0.28 | 0.42 | 0.60 | 1.09 | 1.50 | 0.34 | 0.28 |
| 12559 | Windsor | 5305 Adstol Ave., St. Alexander S.S. | 46 | 0.06 | 0.22 | 0.32 | 0.56 | 0.87 | 1.40 | 1.40 | 0.45 | 0.30 |
| 12583 | Windsor | 13765 St. Gregory's Rd., St. Gregory's S.S. | 54 | 0.10 | 0.16 | 0.20 | 0.34 | 0.65 | 1.20 | 1.20 | 0.31 | 0.23 |
| 14550 | Sarnia | 6th Line, Moore Township | 55 | 0.04 | 0.08 | 0.12 | 0.20 | 0.32 | 0.53 | 0.56 | 0.16 | 0.12 |
| 14564 | Sarnia | Front St./CN Tracks, Centenial Park | 58 | 0.04 | 0.10 | 0.14 | 0.27 | 0.38 | 1.04 | 1.20 | 0.22 | 0.16 |
| 15525 | London | 900 Highbury Ave. | 54 | 0.06 | 0.12 | 0.16 | 0.26 | 0.36 | 0.65 | 0.82 | 0.21 | 0.17 |
| 17550 | Beachville | Earl Lantz Property | 46 | 0.04 | 0.14 | 0.18 | 0.28 | 0.44 | 0.71 | 0.76 | 0.23 | 0.17 |
| 22304 | Nanticoke | Sandusk Rd., Walpole South P.S. | 57 | 0.03 | 0.08 | 0.13 | 0.22 | 0.44 | 0.85 | 1.00 | 0.20 | 0.13 |
| 27308 | St. Catharines | 71 King St. | 60 | 0.06 | 0.16 | 0.22 | 0.26 | 0.44 | 0.81 | 0.82 | 0.25 | 0.19 |
| 27352 | Thorold | 185 Queen St. S. | 53 | 0.16 | 0.22 | 0.31 | 0.40 | 0.72 | 1.19 | 1.30 | 0.39 | 0.32 |
| 29300 | Hamilton Downtown | Elgin/Kelly St. | 58 | 0.22 | 0.29 | 0.52 | 1.00 | 2.22 | 3.58 | 3.70 | 0.88 | 0.57 |
| 29302 | Hamilton | 467 Beach Blvd. | 58 | 0.07 | 0.31 | 0.78 | 1.60 | 2.72 | 5.14 | 5.20 | 1.21 | 0.58 |
| 29313 | Hamilton | Gertrude/Depew St. | 54 | 0.46 | 0.79 | 1.40 | 4.40 | 9.68 | 15.38 | 17.00 | 3.57 | 1.86 |
| 29314 | Hamilton Mountain | Vickers Rd./East 18th St. | 53 | 0.09 | 0.18 | 0.26 | 0.46 | 1.10 | 2.32 | 2.90 | 0.48 | 0.30 |
| 35127 | Etobicoke | Evans Ave./Arnold Cres. | 58 | 0.16 | 0.29 | 0.38 | 0.60 | 0.85 | 1.28 | 1.40 | 0.47 | 0.37 |
| 44127 | Oakville | Bronte Rd./Woburn Cres. | 54 | 0.09 | 0.21 | 0.34 | 0.44 | 0.84 | 2.34 | 3.10 | 0.48 | 0.33 |
| 46127 | Mississauga | Apple Lane, Meadow Park | 58 | 0.04 | 0.10 | 0.14 | 0.21 | 0.32 | 0.57 | 0.74 | 0.18 | 0.13 |
| 62201 | Fort Francis | Armit Ave./4th St. | 50 | 0.02 | 0.14 | 0.26 | 0.38 | 0.52 | 1.24 | 1.50 | 0.31 | 0.19 |
| 63201 | Thunder Bay | James/Walsh St. | 61 | 0.08 | 0.23 | 0.41 | 0.66 | 1.09 | 1.94 | 2.00 | 0.53 | 0.33 |
| 71342 | Sault Ste. Marie | Bonney St., Pumphouse | 61 | 0.20 | 0.47 | 1.40 | 2.70 | 7.21 | 24.73 | 29.00 | 3.34 | 1.29 |
| 71368 | Sault Ste. Marie | Patrick St., Wm. Merrifield P.S. | 61 | 0.06 | 0.14 | 0.24 | 0.50 | 1.68 | 4.35 | 4.90 | 0.60 | 0.29 |
| 77326 | Sudbury | 19 Lisgar St. | 45 | 0.08 | 0.16 | 0.28 | 0.37 | 0.71 | 0.94 | 0.98 | 0.34 | 0.25 |
| 77570 | Copper Cliff | Market St. | 59 | 0.12 | 0.20 | 0.29 | 0.47 | 1.01 | 3.74 | 5.80 | 0.53 | 0.32 |

## Table 29: Manganese (Mn) in $PM_{10}$ Statistics (2000)

Unit: micrograms per cubic metre (µg/$m^3$)

| ID | City | Location | # of Samples | 10% | 30% | 50% | 70% | 90% | 99% | Max. | Arith. Mean | Geom. Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | P E R C E N T I L E S | | | | | | | |
| 12507 | Windsor | Wright/Water St. | 57 | 0.007 | 0.014 | 0.020 | 0.030 | 0.045 | 0.079 | 0.080 | 0.025 | 0.020 |
| 12508 | Windsor Downtown | 467 University Ave. W. | 55 | 0.007 | 0.012 | 0.016 | 0.030 | 0.042 | 0.076 | 0.096 | 0.023 | 0.018 |
| 12513 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 49 | 0.004 | 0.016 | 0.044 | 0.076 | 0.150 | 0.397 | 0.470 | 0.071 | 0.033 |
| 12556 | Windsor | 1400 Roselawn Dr., St. Gabriel S.S. | 56 | 0.004 | 0.008 | 0.010 | 0.014 | 0.024 | 0.038 | 0.050 | 0.013 | 0.010 |
| 12559 | Windsor | 5305 Adstol Ave., St. Alexander S.S. | 46 | 0.002 | 0.008 | 0.012 | 0.020 | 0.030 | 0.052 | 0.054 | 0.016 | 0.011 |
| 12583 | Windsor | 13765 St. Gregory's Rd., St. Gregory's S.S. | 54 | 0.002 | 0.004 | 0.008 | 0.012 | 0.021 | 0.050 | 0.054 | 0.011 | 0.007 |
| 14550 | Sarnia | 6th Line, Moore Township | 55 | 0.002 | 0.002 | 0.004 | 0.007 | 0.011 | 0.016 | 0.016 | 0.006 | 0.004 |
| 14564 | Sarnia | Front St./CN Tracks, Centennial Park | 58 | 0.002 | 0.004 | 0.006 | 0.010 | 0.014 | 0.028 | 0.034 | 0.008 | 0.006 |
| 15525 | London | 900 Highbury Ave. | 54 | 0.003 | 0.006 | 0.008 | 0.010 | 0.020 | 0.040 | 0.040 | 0.010 | 0.008 |
| 17550 | Beachville | Earl Lantz Property | 46 | 0.002 | 0.004 | 0.006 | 0.012 | 0.024 | 0.030 | 0.030 | 0.010 | 0.007 |
| 22304 | Nanticoke | Sandusk Rd., Walpole South P.S. | 57 | 0.002 | 0.004 | 0.006 | 0.008 | 0.016 | 0.039 | 0.050 | 0.009 | 0.006 |
| 27308 | St. Catharines | 71 King St. | 60 | 0.002 | 0.006 | 0.010 | 0.014 | 0.024 | 0.046 | 0.054 | 0.013 | 0.009 |
| 27352 | Thorold | 185 Queen St. S. | 53 | 0.006 | 0.010 | 0.018 | 0.026 | 0.047 | 0.080 | 0.100 | 0.023 | 0.017 |
| 29300 | Hamilton Downtown | Elgin/Kelly St. | 58 | 0.012 | 0.019 | 0.028 | 0.063 | 0.134 | 0.283 | 0.370 | 0.056 | 0.034 |
| 29302 | Hamilton | 467 Beach Blvd. | 58 | 0.002 | 0.018 | 0.044 | 0.079 | 0.150 | 0.253 | 0.270 | 0.064 | 0.032 |
| 29313 | Hamilton | Gertrude/Depew St. | 54 | 0.026 | 0.050 | 0.080 | 0.268 | 0.432 | 0.830 | 0.900 | 0.184 | 0.102 |
| 29314 | Hamilton Mountain | Vickers Rd./East 18th St. | 53 | 0.006 | 0.010 | 0.015 | 0.026 | 0.057 | 0.148 | 0.180 | 0.026 | 0.017 |
| 35127 | Etobicoke | Evans/Arnold Cres. | 58 | 0.008 | 0.014 | 0.022 | 0.029 | 0.040 | 0.061 | 0.064 | 0.024 | 0.020 |
| 44127 | Oakville | Bronte Rd./Woburn Cres. | 54 | 0.004 | 0.012 | 0.016 | 0.026 | 0.047 | 0.098 | 0.110 | 0.023 | 0.015 |
| 46127 | Mississauga | Apple Lane, Meadow Park | 58 | 0.002 | 0.006 | 0.008 | 0.012 | 0.018 | 0.031 | 0.032 | 0.010 | 0.008 |
| 62201 | Fort Francis | Armit Ave./4th St. | 50 | 0.002 | 0.002 | 0.006 | 0.010 | 0.030 | 0.235 | 0.310 | 0.018 | 0.006 |
| 63201 | Thunder Bay | James/Walsh St. | 61 | 0.002 | 0.009 | 0.015 | 0.020 | 0.030 | 0.048 | 0.052 | 0.016 | 0.012 |
| 71342 | Sault Ste. Marie | Bonney St., Pumphouse | 61 | 0.014 | 0.028 | 0.059 | 0.157 | 0.372 | 0.849 | 0.940 | 0.137 | 0.066 |
| 71368 | Sault Ste. Marie | Patrick St., Wm. Merrifield P.S. | 61 | 0.004 | 0.008 | 0.012 | 0.034 | 0.099 | 0.220 | 0.220 | 0.040 | 0.018 |
| 77326 | Sudbury | 19 Lisgar St. | 45 | 0.002 | 0.007 | 0.009 | 0.012 | 0.014 | 0.026 | 0.030 | 0.010 | 0.008 |
| 77570 | Copper Cliff | Market St. | 59 | 0.002 | 0.004 | 0.006 | 0.008 | 0.014 | 0.072 | 0.110 | 0.009 | 0.006 |

## Table 30: Sulphate ($SO_4^{2-}$) in $PM_{10}$ Statistics (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| ID | City | Location | # of Samples | PERCENTILES | | | | | | Max. | Arith. Mean | Geom. Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 10% | 30% | 50% | 70% | 90% | 99% | | | |
| 12507 | Windsor | Wright/Water St. | 57 | 1.8 | 2.6 | 3.6 | 4.6 | 9.4 | 15.8 | 17.9 | 4.6 | 3.8 |
| 12508 | Windsor Downtown | 467 University Ave. W. | 55 | 1.3 | 2.9 | 3.3 | 5.2 | 10.3 | 14.2 | 15.0 | 4.6 | 3.7 |
| 12513 | Windsor | 3665 Wyandotte St. E., Filtration Plant | 49 | 1.3 | 2.4 | 2.9 | 4.3 | 6.6 | 13.8 | 14.7 | 4.0 | 3.1 |
| 12556 | Windsor | 1400 Roselawn Dr., St. Gabriel S.S. | 56 | 1.6 | 2.6 | 3.2 | 4.7 | 9.5 | 14.6 | 17.2 | 4.4 | 3.5 |
| 12559 | Windsor | 5305 Adstol Ave., St. Alexander S.S. | 46 | 1.0 | 2.0 | 2.5 | 3.8 | 8.2 | 14.8 | 17.3 | 3.7 | 2.7 |
| 12583 | Windsor | 13765 St. Gregory's Rd., St. Gregory's S.S. | 54 | 1.7 | 2.8 | 3.8 | 5.0 | 7.5 | 12.3 | 13.4 | 4.4 | 3.7 |
| 14550 | Sarnia | 6th Line, Moore Township | 55 | 1.3 | 2.4 | 3.1 | 5.0 | 9.7 | 12.5 | 12.7 | 4.4 | 3.5 |
| 14564 | Sarnia | Front St./CN Tracks, Centenial Park | 58 | 1.1 | 2.3 | 3.1 | 5.2 | 10.0 | 12.5 | 12.9 | 4.3 | 3.2 |
| 15525 | London | 900 Highbury Ave. | 54 | 0.7 | 1.6 | 2.2 | 3.5 | 6.6 | 11.1 | 11.2 | 3.2 | 2.3 |
| 17550 | Beachville | Earl Lantz Property | 46 | 1.2 | 2.2 | 3.3 | 5.3 | 8.8 | 12.1 | 12.7 | 4.3 | 3.4 |
| 22304 | Nanticoke | Sandusk Rd., Walpole South P.S. | 57 | 1.2 | 1.7 | 2.5 | 4.4 | 6.2 | 13.4 | 14.5 | 3.5 | 2.8 |
| 27308 | St. Catharines | 71 King St. | 60 | 1.2 | 2.1 | 3.0 | 3.8 | 6.3 | 12.1 | 12.9 | 3.6 | 2.9 |
| 27352 | Thorold | 185 Queen St. S. | 53 | 1.0 | 1.8 | 2.8 | 3.7 | 5.7 | 11.6 | 12.3 | 3.2 | 2.5 |
| 29300 | Hamilton Downtown | Elgin/Kelly St. | 58 | 1.2 | 2.2 | 3.2 | 4.4 | 7.1 | 11.6 | 12.5 | 3.9 | 3.1 |
| 29302 | Hamilton | 467 Beach Blvd. | 58 | 1.2 | 2.4 | 2.9 | 4.4 | 6.5 | 11.8 | 14.2 | 3.7 | 3.1 |
| 29313 | Hamilton | Gertrude/Depew St. | 54 | 1.6 | 2.6 | 3.5 | 4.2 | 7.3 | 10.9 | 11.8 | 4.1 | 3.5 |
| 29314 | Hamilton Mountain | Vickers Rd./East 18th St. | 53 | 1.1 | 2.0 | 2.5 | 3.9 | 6.3 | 10.2 | 10.4 | 3.5 | 2.8 |
| 35127 | Etobicoke | Evans Ave./Arnold Cres. | 58 | 1.0 | 1.7 | 2.7 | 3.6 | 6.2 | 12.4 | 15.8 | 3.3 | 2.5 |
| 44127 | Oakville | Bronte Rd./Woburn Cres. | 54 | 1.0 | 1.9 | 2.5 | 3.3 | 5.6 | 8.3 | 9.3 | 3.0 | 2.6 |
| 46127 | Mississauga | Apple Lane, Meadow Park | 58 | 1.0 | 1.6 | 2.4 | 3.4 | 5.7 | 9.8 | 10.0 | 3.1 | 2.5 |
| 62201 | Fort Francis | Armit Ave./4th St. | 50 | 0.4 | 0.9 | 1.2 | 1.9 | 2.7 | 8.5 | 13.2 | 1.7 | 1.2 |
| 63201 | Thunder Bay | James/Walsh St. | 61 | 0.4 | 0.8 | 1.0 | 1.8 | 3.1 | 4.7 | 5.1 | 1.5 | 1.1 |
| 71342 | Sault Ste. Marie | Bonney St., Pumphouse | 61 | 0.7 | 1.3 | 2.3 | 3.7 | 7.5 | 10.2 | 11.7 | 3.2 | 2.2 |
| 71368 | Sault Ste. Marie | Patrick St., Wm. Merrifield P.S. | 61 | 0.5 | 1.1 | 1.5 | 2.4 | 4.4 | 8.1 | 10.8 | 2.1 | 1.5 |
| 77326 | Sudbury | 19 Lisgar St. | 45 | 0.5 | 1.4 | 1.7 | 2.2 | 3.6 | 25.3 | 39.7 | 2.8 | 1.6 |
| 77570 | Copper Cliff | Market St. | 59 | 0.7 | 1.0 | 1.7 | 2.2 | 4.4 | 8.5 | 8.9 | 2.2 | 1.7 |

## Table 31: 10-Year Trend for $SO_2$

**Annual Mean (ppb)**

**$SO_2$ annual AAQC = 20 ppb**

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Burlington | 3.0 | 6.0 | 6.0 | 4.0 | 2.0 | 4.0 | 5.1 | 3.2 | 4.9 | 5.2 |
| Cornwall | 5.0 | 5.0 | 7.0 | 12.0 | 5.0 | 5.0 | 3.9 | 5.5 | 3.9 | 3.5 |
| Hamilton Downtown | 7.0 | 7.0 | 6.0 | 5.0 | 8.0 | 9.0 | 5.8 | 6.3 | 6.6 | 5.1 |
| Kitchener | 3.0 | 3.0 | 3.0 | 3.0 | 2.0 | 3.0 | 3.1 | 3.0 | 3.4 | 3.2 |
| London # | 5.0 | 4.0 | 3.0 | 4.0 | 2.0 | 3.0 | 2.5 | 3.2 | 4.9 | 3.5 |
| Long Point | 4.0 | 5.0 | 2.0 | 3.0 | 2.0 | 3.0 | 2.7 | 3.0 | 3.7 | 3.7 |
| Mississauga | 5.0 | 6.0 | 3.0 | 3.0 | 2.0 | n/a | n/a | 5.1 | 4.7 | 4.6 |
| Niagara Region | 5.0 | 5.0 | 3.0 | 3.0 | 5.0 | 6.0 | 5.8 | 4.0 | 2.2 | 3.0 |
| Oakville | 5.0 | 4.0 | 5.0 | 4.0 | 2.0 | 5.0 | 4.8 | 5.1 | 4.0 | 4.8 |
| Oshawa | 4.0 | 4.0 | 3.0 | 2.0 | 2.0 | 5.0 | 4.6 | 4.8 | 5.1 | n/a |
| Ottawa | 3.0 | 2.0 | 2.0 | 1.0 | 1.0 | 5.0 | 6.3 | 3.4 | 4.2 | 4.1 |
| Sarnia | 9.0 | 9.0 | 10.0 | 9.0 | 6.0 | 7.0 | 8.5 | 10.3 | 11.8 | 10.4 |
| Simcoe | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 3.0 | 3.2 | 3.8 | 3.7 | 4.3 |
| Sudbury | 5.0 | 4.0 | 4.0 | 3.0 | 4.0 | 5.0 | 3.5 | 5.2 | 3.0 | 4.2 |
| Thunder Bay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 | 0.4 | 0.3 |
| Tiverton | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.7 | n/a | n/a |
| Toronto Downtown | 5.0 | 8.0 | 7.0 | 3.0 | 3.0 | 5.0 | 5.3 | 4.0 | n/a | 4.7 |
| Toronto East | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 6.0 | 5.2 | 4.2 | 4.9 | n/a |
| Toronto North ^ | 2.0 | 3.0 | 4.0 | 3.0 | 2.0 | 5.0 | 4.4 | 4.2 | 5.0 | n/a |
| Toronto West | 6.0 | 8.0 | 5.0 | 4.0 | 3.0 | 4.0 | 4.9 | 4.1 | n/a | 3.6 |
| Windsor Downtown | 7.0 | 6.0 | 6.0 | 6.0 | 5.0 | 10.0 | 6.7 | 7.4 | 6.7 | 6.2 |
| York Region | 4.0 | 3.0 | 3.0 | 4.0 | 3.0 | 3.0 | 3.3 | n/a | n/a | 4.4 |
| **Composite Mean** | **4.3** | **4.5** | **4.0** | **3.8** | **3.0** | **4.7** | **4.4** | **4.4** | **4.6** | **4.4** |

***Notes:***

- *# Site change from King/Rectory (15001) to 900 Highbury Ave. (15025) in 1995*
- *^ Site changed location from Science Centre (34002) to North York Central (34020) in 1992.*
- *n/a - data not available*

## Table 32: 10-Year Trend for SP (as measured by COH)

**Annual Mean (COH units/1000ft)**

**COH annual AAQC = 0.5 COH unit**

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 0.17 | 0.19 | 0.22 | 0.19 | 0.22 | 0.26 | 0.15 | 0.09 | 0.13 | n/a |
| Hamilton Downtown | 0.41 | 0.45 | 0.48 | 0.47 | 0.39 | 0.43 | 0.33 | 0.33 | 0.25 | 0.31 |
| London # | 0.25 | 0.24 | 0.25 | 0.25 | 0.20 | 0.21 | 0.17 | 0.18 | 0.14 | 0.14 |
| Niagara Region | 0.25 | 0.26 | 0.27 | 0.25 | 0.24 | 0.24 | 0.20 | 0.21 | 0.20 | 0.19 |
| Ottawa | 0.25 | 0.28 | 0.24 | 0.22 | 0.18 | 0.18 | 0.16 | 0.17 | n/a | n/a |
| Sarnia | 0.24 | 0.22 | 0.20 | 0.20 | 0.18 | 0.17 | 0.18 | 0.19 | 0.18 | 0.16 |
| Sudbury | 0.17 | 0.17 | 0.21 | 0.19 | 0.14 | 0.15 | 0.12 | 0.09 | 0.11 | 0.08 |
| Toronto North ^ | 0.33 | 0.31 | 0.35 | 0.40 | 0.38 | 0.37 | 0.28 | 0.29 | n/a | n/a |
| Toronto West | 0.50 | 0.46 | 0.51 | 0.38 | 0.33 | 0.29 | 0.26 | 0.34 | 0.33 | n/a |
| Windsor Downtown | 0.30 | 0.34 | 0.36 | 0.28 | 0.31 | 0.26 | 0.15 | 0.20 | 0.19 | 0.16 |
| **Composite Mean** | **0.29** | **0.29** | **0.31** | **0.28** | **0.26** | **0.26** | **0.20** | **0.21** | **0.19** | **0.17** |

*Notes:*

- *# Site changed from King Rectory (15001) to 900 Highbury Ave. (15025) in 1995.*
- *^ Site changed location from Science Centre (34002) to North York Central (34020) in 1992.*
- *n/a - data not available.*

## Table 33: 10-Year Trend for TRS

### Annual Mean (ppb)

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 2.9 | 2.3 | 1.8 | 2.5 | 1.3 | 1.2 | 2.0 | 1.2 | 0.9 | 1.1 |
| Fort Frances | 4.3 | 4.2 | 4.2 | 2.4 | 2.5 | 2.7 | 2.6 | 1.4 | 1.2 | 2.1 |
| Hamilton Downtown | 0.8 | 0.6 | 0.7 | 1.1 | 1.2 | 1.4 | 1.0 | 0.7 | 0.6 | 0.7 |
| Marathon | 0.9 | 0.5 | 0.7 | 0.9 | 0.5 | 0.4 | 0.2 | 0.1 | 0.1 | 0.1 |
| Oakville | 1.6 | 0.5 | 1.0 | 1.3 | 0.3 | 1.3 | 1.3 | 1.1 | 1.4 | 1.2 |
| Red Rock | 1.4 | 2.0 | 1.9 | 3.2 | 1.1 | 1.2 | 1.6 | 2.8 | 3.8 | 3.2 |
| Terrace Bay | 1.3 | 1.7 | 1.7 | 1.1 | 1.7 | 1.3 | 1.0 | 1.0 | 0.9 | 0.9 |
| Tiverton | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | 0.1 | 0.2 | n/a | n/a |
| Thunder Bay | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.8 | 1.1 | 1.3 | 1.2 | 0.2 |
| **Composite Mean** | **1.5** | **1.1** | **1.3** | **1.4** | **1.0** | **1.2** | **1.2** | **1.1** | **1.3** | **1.2** |

## Table 34: 10-Year Trend for CO

### Annual Mean (ppm)

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 0.8 | 0.5 | 0.8 | 0.5 | 0.6 | 0.6 | 1.1 | 0.3 | 0.4 | 0.3 |
| Hamilton Downtown | 1.1 | 1.2 | 1.1 | 0.8 | 0.6 | 1.0 | 0.7 | 1.1 | 0.8 | 0.8 |
| Kitchener | 0.6 | 0.5 | 0.4 | 0.3 | 0.3 | 0.4 | 0.2 | 0.3 | 0.4 | 0.4 |
| London # | 0.7 | 0.7 | 0.6 | 0.5 | 0.1 | 0.0 | 0.3 | 0.1 | 0.3 | 0.2 |
| Niagara Region | 1.0 | 0.7 | 0.5 | 0.4 | 0.2 | 0.3 | 0.1 | 0.4 | 0.2 | 0.4 |
| Oakville | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.7 | 0.3 | 0.2 | 0.2 | 0.4 |
| Oshawa | 0.8 | 0.9 | 0.9 | 1.0 | 0.8 | 0.6 | 0.4 | 1.0 | 0.7 | n/a |
| Ottawa | 1.0 | 1.1 | 0.9 | 0.8 | 0.6 | 0.7 | 0.4 | 1.1 | 0.8 | 0.7 |
| Sarnia | 0.2 | 0.3 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.4 |
| Sudbury | 0.3 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.2 |
| Toronto Downtown | 1.1 | 1.0 | 1.1 | 1.0 | 0.7 | 1.3 | 1.2 | 1.1 | n/a | 1.3 |
| Toronto East | 1.2 | 1.0 | 0.8 | 1.0 | 1.0 | 1.1 | 0.6 | 0.9 | 0.8 | n/a |
| Toronto North ^ | 0.7 | 1.0 | 1.1 | 0.9 | 0.5 | 0.9 | 0.7 | 1.0 | 0.8 | n/a |
| Toronto West | 0.8 | 0.6 | 0.7 | 0.7 | 0.8 | 0.7 | 1.0 | 1.0 | 1.0 | 1.8 |
| Windsor Downtown | 1.0 | 0.9 | 0.8 | 1.0 | 0.9 | 0.8 | 0.6 | 0.7 | 0.6 | 0.3 |
| **Composite Mean** | **0.8** | **0.7** | **0.7** | **0.7** | **0.5** | **0.6** | **0.5** | **0.6** | **0.5** | **0.5** |

*Notes:*

- *# Site changed location from King/Rectory to 900 Highbury Ave. in 1995.*
- *^ Site changed location from Science Centre (34002) to North York Central (34020) in 1992.*
- *n/a - data not available*

## Table 35: 10-Year Trend for $NO_2$

### Annual Mean (ppb)

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 6.0 | 10.0 | 8.0 | 9.0 | 8.0 | 12.0 | 8.0 | n/a | 9.0 | 10.5 |
| Hamilton Downtown | 22.0 | 19.0 | 22.0 | 22.0 | 19.0 | 22.0 | 18.6 | 22.4 | 21.6 | 21.8 |
| Kitchener | 13.0 | 15.0 | 14.0 | 14.0 | 11.0 | 13.0 | 13.7 | 16.5 | 14.0 | 14.7 |
| London # | 19.0 | 18.0 | 20.0 | 23.0 | 20.0 | 18.0 | 18.0 | 17.7 | 19.4 | 17.4 |
| Niagara Region | 16.0 | 12.0 | 17.0 | 17.0 | 14.0 | 16.0 | 13.8 | 15.7 | 16.2 | 16.9 |
| Oakville | 17.0 | 16.0 | 19.0 | 17.0 | 17.0 | 20.0 | 20.8 | 17.1 | 17.2 | 17.2 |
| Oshawa | 18.0 | 18.0 | 19.0 | 18.0 | 20.0 | 19.0 | 18.6 | 20.0 | 21.5 | 19.7 |
| Ottawa | 20.0 | 17.0 | 19.0 | 19.0 | 16.0 | 13.0 | 12.5 | 12.4 | 12.2 | 13.8 |
| Sarnia | 19.0 | 20.0 | 16.0 | 18.0 | 17.0 | 16.0 | 16.9 | 18.0 | 16.7 | 16.3 |
| Sudbury | 9.0 | 9.0 | 10.0 | 11.0 | 12.0 | 8.0 | 7.4 | 6.0 | 7.7 | 8.6 |
| Toronto Downtown | 29.0 | 27.0 | 29.0 | 30.0 | 30.0 | 34.0 | 31.7 | 27.7 | 26.9 | 26.8 |
| Toronto East | 24.0 | 19.0 | 19.0 | 22.0 | 25.0 | 23.0 | 23.4 | 25.5 | 24.6 | 23.7 |
| Toronto North ^ | 29.0 | 24.0 | 21.0 | 20.0 | 18.0 | 22.0 | 20.2 | 23.4 | 24.3 | 22.7 |
| Toronto West | 25.0 | 26.0 | 26.0 | 27.0 | 25.0 | 25.0 | 26.7 | 26.2 | 24.7 | 23.2 |
| Windsor Downtown | 25.0 | 25.0 | 26.0 | 28.0 | 25.0 | 26.0 | 23.8 | 23.8 | 22.9 | 21.6 |
| **Composite Mean** | **19.4** | **18.3** | **19.0** | **19.7** | **18.5** | **19.1** | **18.3** | **19.5** | **18.6** | **18.3** |

*Notes:*

- *# Site changed location from King/Rectory to 900 Highbury Ave. in 1995.*
- *^ Site changed location from Science Centre (34002) to North York Central (34020) in 1992.*
- *n/a - data not available*

## Table 36: 10-Year Trend for NO

### Annual Mean (ppb)

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 6.0 | 8.0 | 7.0 | 6.0 | 6.0 | 8.0 | 6.3 | n/a | 5.9 | 3.4 |
| Hamilton Downtown | 11.0 | 15.0 | 17.0 | 18.0 | 16.0 | 15.0 | 10.8 | 12.6 | 12.0 | 14.7 |
| Kitchener | 5.0 | 6.0 | 6.0 | 8.0 | 7.0 | 7.0 | 5.5 | 6.9 | 6.6 | 7.4 |
| London # | 11.0 | 13.0 | 13.0 | 18.0 | 15.0 | 10.0 | 7.6 | 9.1 | 8.5 | 8.0 |
| Niagara Region | 8.0 | 14.0 | 12.0 | 10.0 | 10.0 | 13.0 | 10.3 | 16.3 | 11.7 | 12.4 |
| Oakville | 11.0 | 13.0 | 16.0 | 15.0 | 15.0 | 16.0 | 14.9 | 15.8 | 13.0 | 16.2 |
| Oshawa | 14.0 | 14.0 | 17.0 | 19.0 | 18.0 | 15.0 | 16.4 | 15.6 | 15.1 | 14.2 |
| Ottawa | 9.0 | 11.0 | 12.0 | 11.0 | 7.0 | 8.0 | 7.0 | 7.9 | 14.8 | 11.0 |
| Sarnia | 6.0 | 7.0 | 7.0 | 9.0 | 6.0 | 7.0 | 7.0 | 6.9 | 7.1 | 8.9 |
| Sudbury | 5.0 | 4.0 | 4.0 | 5.0 | 6.0 | 6.0 | 4.9 | 3.7 | 5.0 | 4.5 |
| Toronto Downtown | n/a | 25.0 | 27.0 | 25.0 | 23.0 | 42.0 | 32.9 | 24.3 | 15.8 | 14.4 |
| Toronto East | 26.0 | 25.0 | 24.0 | 26.0 | 24.0 | 23.0 | 24.9 | 23.2 | 20.1 | 23.0 |
| Toronto North ^ | 20.0 | 21.0 | 16.0 | 17.0 | 18.0 | 17.0 | 16.3 | 16.5 | 16.5 | 16.8 |
| Toronto West | 19.0 | 25.0 | 22.0 | 23.0 | 19.0 | 22.0 | 18.6 | 17.9 | 20.7 | 19.3 |
| Windsor Downtown | 19.0 | 18.0 | 17.0 | 17.0 | 15.0 | 16.0 | 15.9 | 16.3 | 13.3 | 13.9 |
| **Composite Mean** | **12.1** | **14.6** | **14.5** | **15.1** | **13.7** | **15.0** | **13.3** | **13.8** | **12.4** | **12.5** |

***Notes:***

- *# Site change location from King/Rectory (15001) to 900 Highbury Ave (15025) in 1995*
- *^ Site changed location from Science Centre (34002) to North York Central (34020) in 1992.*
- *n/a - data not available*

## Table 37: 10-Year Trend for $NO_X$

### Annual Mean (ppb)

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 16.0 | 19.0 | 17.0 | 17.0 | 16.0 | 17.0 | 14.5 | n/a | 14.7 | 14.2 |
| Hamilton Downtown | 33.0 | 33.0 | 39.0 | 40.0 | 35.0 | 37.0 | 29.5 | 34.7 | 34.0 | 37.0 |
| Kitchener | 21.0 | 22.0 | 21.0 | 23.0 | 20.0 | 20.0 | 19.2 | 23.9 | 20.5 | 21.9 |
| London # | 31.0 | 34.0 | 35.0 | 38.0 | 32.0 | 28.0 | 24.4 | 25.8 | 25.9 | 24.7 |
| Niagara Region | 24.0 | 27.0 | 30.0 | 28.0 | 25.0 | 29.0 | 24.5 | 31.7 | 24.8 | 28.8 |
| Oakville | 28.0 | 30.0 | 35.0 | 34.0 | 32.0 | 33.0 | 32.8 | 30.0 | 29.6 | 33.0 |
| Oshawa | 32.0 | 33.0 | 36.0 | 37.0 | 36.0 | 35.0 | 34.9 | 35.1 | 35.8 | 33.6 |
| Ottawa | 29.0 | 28.0 | 29.0 | 28.0 | 22.0 | 25.0 | 19.6 | 22.8 | 27.5 | 24.4 |
| Sarnia | 26.0 | 26.0 | 23.0 | 28.0 | 23.0 | 23.0 | 24.9 | 25.1 | 23.5 | 25.0 |
| Sudbury | 14.0 | 14.0 | 16.0 | 17.0 | 17.0 | 14.0 | 12.5 | 9.4 | 12.7 | 12.6 |
| Toronto Downtown | 54.0 | 52.0 | 55.0 | 54.0 | 55.0 | 76.0 | 64.3 | 51.6 | 41.9 | 40.4 |
| Toronto East | 50.0 | 46.0 | 46.0 | 50.0 | 49.0 | 45.0 | 47.5 | 48.3 | 44.9 | 46.3 |
| Toronto North ^ | 49.0 | 45.0 | 37.0 | 38.0 | 36.0 | 39.0 | 36.7 | 39.9 | 40.7 | 39.3 |
| Toronto West | 44.0 | 51.0 | 49.0 | 49.0 | 45.0 | 47.0 | 45.2 | 43.7 | 45.4 | 42.3 |
| Windsor Downtown | 42.0 | 42.0 | 42.0 | 42.0 | 38.0 | 39.0 | 39.3 | 38.5 | 37.0 | 36.0 |
| **Composite Mean** | **32.9** | **33.5** | **34.0** | **34.9** | **32.1** | **33.8** | **31.3** | **32.9** | **30.6** | **30.6** |

*Notes:*

- *# Site change from King/Rectory (15001) to 900 Highbury Ave. (15025) in 1995.*
- *^ Site changed location from Science Centre (34002) to North York Central (34020) in 1992.*
- *n/a - data not available*

## Table 38: 10-Year Trend for $O_3$

### Annual Mean (ppb)

| City | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cornwall | 20.7 | 20.8 | 21.6 | 21.7 | 23.5 | 21.0 | 22.8 | 24.2 | 25.8 | 24.0 |
| Grand Bend | n/a | 29.7 | 31.3 | 30.2 | 31.3 | 31.9 | 31.2 | 31.2 | 32.5 | 32.6 |
| Hamilton Downtown | 19.9 | 16.9 | 16.9 | 17.0 | 18.0 | 17.3 | 18.1 | 19.1 | 19.5 | 17.0 |
| Kitchener | 27.2 | 22.7 | 23.2 | 24.4 | 25.1 | 23.8 | 23.4 | 25.4 | 25.2 | 23.0 |
| London # | 22.7 | 20.3 | 22.8 | 23.1 | 21.7 | 23.1 | 22.8 | 25.1 | 25.8 | 21.1 |
| Long Point | 33.9 | 32.3 | 31.2 | 32.2 | 31.0 | 34.4 | 35.2 | 32.9 | 35.6 | 33.1 |
| Mandaumin | 28.1 | 23.5 | 24.5 | 24.6 | 24.0 | 23.4 | 27.9 | 29.9 | 29.0 | 25.9 |
| Merlin | 28.4 | 24.3 | 23.7 | 24.2 | 28.0 | 28.6 | 27.0 | 28.4 | 27.2 | 24.6 |
| Mississauga | 18.6 | 15.6 | 16.1 | 19.5 | 19.2 | 19.4 | 20.0 | 20.8 | 22.2 | 19.9 |
| Niagara Region | 25.0 | 19.3 | 23.9 | 23.6 | 20.5 | 20.3 | 20.9 | 20.8 | 21.7 | 18.9 |
| Oakville | 22.1 | 19.3 | 21.0 | 22.5 | 20.4 | 21.1 | 20.8 | 21.8 | 22.4 | 21.0 |
| Oshawa | 22.6 | 20.3 | 21.4 | 23.8 | 22.7 | 21.9 | 23.2 | 23.1 | 25.0 | 21.2 |
| Ottawa | 20.8 | 17.4 | 18.1 | 19.7 | 20.9 | 18.9 | 20.6 | 19.1 | 21.2 | 19.9 |
| Sarnia | 23.4 | 21.3 | 22.6 | 21.4 | 22.2 | 25.2 | 24.5 | 26.1 | 26.5 | 24.3 |
| Simcoe | 29.1 | 25.1 | 27.8 | 30.2 | 30.7 | 29.9 | 28.6 | 31.1 | 31.3 | 29.3 |
| Sudbury | 27.0 | 25.4 | 25.9 | 27.1 | 29.7 | 28.1 | 28.0 | 29.1 | 30.7 | 26.1 |
| Tiverton | 34.2 | 33.4 | 32.2 | 31.7 | 31.6 | 32.0 | 32.5 | 32.2 | n/a | 32.3 |
| Toronto Downtown | 18.0 | 12.5 | 14.6 | 16.9 | 16.6 | 12.2 | 13.7 | 17.8 | 20.2 | 19.7 |
| Toronto East | 19.1 | 14.3 | 17.0 | 18.2 | 19.3 | 18.9 | 18.0 | 20.6 | 21.5 | 19.6 |
| Toronto West | 19.0 | 15.4 | 16.0 | 17.4 | 16.3 | 17.1 | 19.4 | 20.2 | n/a | 20.1 |
| Windsor Downtown | 17.6 | 15.1 | 17.1 | 18.0 | 18.3 | 20.4 | 20.7 | 21.4 | 21.7 | 18.6 |
| York Region | 25.0 | 23.0 | 23.0 | 25.3 | 24.4 | 26.4 | 30.1 | 31.4 | 31.2 | 27.5 |
| **Composite Mean** | **24.3** | **21.2** | **23.1** | **23.9** | **23.4** | **23.4** | **24.1** | **25.1** | **25.8** | **23.6** |

*Notes:*

- *# Site change from King/Rectory (15001) to 900 Highbury Ave. (15025) in 1995.*
- *n/a - data not available*

## Table 39: Stations Used in Gaseous Trends

| City | Station # (Sampling Period) |
|---|---|
| Burlington | 44008 (1991 - 2000) |
| Cornwall | 56051 (1991 - 2000) |
| Toronto West (Etobicoke) | 35003 (1991 - 2000) |
| Fort Frances | 62030 (1991 - 2000) |
| Hamilton Downtown | 29000 (1991 - 2000) |
| Grand Bend | 15020 (1991 - 2000) |
| Kitchener | 26060 (1991 - 2000) |
| London | 15001 (1991 - 1995); 15025 (1996 - 2000) |
| Long Point | 22901 (1991 - 2000) |
| Mandaumin | 14118 (1991 - 2000) |
| Merlin | 13021 (1991 - 2000) |
| Mississauga | 46110 (1991 - 2000) |
| Niagara Falls | 27056 (1991 - 1992); 27072 (1993-2000) |
| North Bay | 75010 (1991 - 2000) |
| Toronto North (North York) | 34002 (1991); 34020 (1992-2000) |
| Oakville | 44015 (1991 - 2000) |
| Oshawa | 45025 (1991 - 2000) |
| Ottawa | 51001 (1991 - 2000) |
| Peterborough | 59006 (1991 - 2000) |
| Sarnia | 14064 (1991 - 2000) |
| Toronto East (Scarborough) | 33003 (1991 - 2000) |
| Simcoe | 22071 (1991 - 2000) |
| Niagara Region | 27067 (1991 - 2000) |
| York Region | 48002 (1991 - 2000) |
| Sudbury | 77203 (1991 - 2000) |
| Terrace Bay | 63020 (1991 - 2000) |
| Thunder Bay | 63200 (1991 - 2000) |
| Tiverton | 18007 (1991 - 2000) |
| Toronto Downtown | 31103 (1991 - 2000) |
| Windsor Downtown | 12008 (1991 - 2000) |

## Table 40: VOC Annual Statistics at Egbert (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 1,1,1-Trichloroethane | 168 | 0 | 0.258 | 0.284 | 0.303 | 0.321 | 0.349 | 0.373 | 0.243 | 0.304 | 0.028 |
| 1,2,3-Trimethylbenzene | 168 | 150 | 0.050 | 0.050 | 0.050 | 0.050 | 0.058 | 0.849 | 0.050 | 0.062 | 0.074 |
| 1,2,4-Trimethylbenzene | 168 | 73 | 0.050 | 0.050 | 0.053 | 0.077 | 0.166 | 2.051 | 0.050 | 0.107 | 0.206 |
| 1,3,5-Trimethylbenzene | 168 | 151 | 0.050 | 0.050 | 0.050 | 0.050 | 0.051 | 0.631 | 0.050 | 0.061 | 0.057 |
| 1,3-Butadiene | 168 | 160 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.109 | 0.050 | 0.052 | 0.008 |
| 1,3-Diethylbenzene | 168 | 165 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.181 | 0.050 | 0.051 | 0.012 |
| 1,4-Dichlorobenzene | 168 | 156 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.164 | 0.050 | 0.053 | 0.013 |
| 1,4-Diethylbenzene | 168 | 127 | 0.050 | 0.050 | 0.050 | 0.050 | 0.069 | 0.685 | 0.050 | 0.062 | 0.060 |
| 1-Butene/Isobutene | 168 | 1 | 0.068 | 0.110 | 0.143 | 0.164 | 0.201 | 0.556 | 0.050 | 0.151 | 0.076 |
| 1-Hexene | 168 | 53 | 0.050 | 0.050 | 0.109 | 0.129 | 0.147 | 0.235 | 0.050 | 0.101 | 0.041 |
| 1-Pentene | 168 | 69 | 0.050 | 0.050 | 0.055 | 0.065 | 0.081 | 0.140 | 0.050 | 0.061 | 0.017 |
| 2,2,4-Trimethylpentane | 168 | 51 | 0.050 | 0.050 | 0.083 | 0.149 | 0.244 | 0.802 | 0.050 | 0.126 | 0.117 |
| 2,2,5-Trimethylhexane | 168 | 165 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.065 | 0.050 | 0.050 | 0.001 |
| 2,2-Dimethylbutane | 168 | 54 | 0.050 | 0.050 | 0.065 | 0.089 | 0.117 | 0.230 | 0.050 | 0.075 | 0.032 |
| 2,2-Dimethylhexane | 162 | 159 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.101 | 0.050 | 0.051 | 0.004 |
| 2,2-Dimethylpentane | 168 | 163 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.062 | 0.050 | 0.050 | 0.001 |
| 2,3,4-Trimethylpentane | 168 | 123 | 0.050 | 0.050 | 0.050 | 0.051 | 0.085 | 0.329 | 0.050 | 0.062 | 0.036 |
| 2,3-Dimethylbutane | 168 | 93 | 0.050 | 0.050 | 0.050 | 0.080 | 0.127 | 0.426 | 0.050 | 0.078 | 0.061 |
| 2,3-Dimethylpentane | 168 | 91 | 0.050 | 0.050 | 0.050 | 0.077 | 0.119 | 0.332 | 0.050 | 0.073 | 0.046 |
| 2,4-Dimethylhexane | 168 | 129 | 0.050 | 0.050 | 0.050 | 0.050 | 0.075 | 0.234 | 0.050 | 0.057 | 0.022 |
| 2,4-Dimethylpentane | 168 | 136 | 0.050 | 0.050 | 0.050 | 0.050 | 0.066 | 0.205 | 0.050 | 0.056 | 0.020 |
| 2,5-Dimethylhexane | 168 | 153 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.140 | 0.050 | 0.053 | 0.012 |
| 2-Ethyl-1-butene | 150 | 150 |  |  |  |  |  |  |  |  |  |
| 2-Ethyltoluene | 168 | 144 | 0.050 | 0.050 | 0.050 | 0.050 | 0.075 | 0.541 | 0.050 | 0.063 | 0.052 |
| 2-methyl-1-butene | 168 | 78 | 0.050 | 0.050 | 0.052 | 0.066 | 0.077 | 0.155 | 0.050 | 0.061 | 0.017 |
| 2-Methyl-2-butene | 168 | 129 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.123 | 0.050 | 0.055 | 0.012 |
| 2-Methylheptane | 168 | 104 | 0.050 | 0.050 | 0.050 | 0.058 | 0.126 | 0.363 | 0.050 | 0.071 | 0.055 |
| 2-Methylhexane | 168 | 100 | 0.050 | 0.050 | 0.050 | 0.088 | 0.154 | 0.729 | 0.050 | 0.087 | 0.093 |
| 2-Methylpentane | 168 | 11 | 0.050 | 0.088 | 0.160 | 0.282 | 0.479 | 1.463 | 0.050 | 0.230 | 0.228 |
| 3-Ethyltoluene | 168 | 117 | 0.050 | 0.050 | 0.050 | 0.058 | 0.129 | 1.026 | 0.050 | 0.084 | 0.115 |
| 3-Methyl-1-pentene | 168 | 168 |  |  |  |  |  |  |  |  |  |

## Table 40: VOC Annual Statistics at Egbert (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Methylheptane | 168 | 136 | 0.050 | 0.050 | 0.050 | 0.050 | 0.082 | 0.309 | 0.050 | 0.062 | 0.038 |
| 3-Methylhexane | 168 | 60 | 0.050 | 0.050 | 0.064 | 0.125 | 0.211 | 0.786 | 0.050 | 0.113 | 0.118 |
| 3-Methylpentane | 168 | 12 | 0.050 | 0.073 | 0.112 | 0.190 | 0.318 | 1.060 | 0.050 | 0.165 | 0.158 |
| 4-Ethyltoluene | 168 | 101 | 0.050 | 0.050 | 0.050 | 0.058 | 0.101 | 0.519 | 0.050 | 0.068 | 0.054 |
| 4-Methyl-1-pentene | 168 | 166 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.058 | 0.050 | 0.050 | 0.001 |
| 4-Methylheptane | 168 | 155 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.127 | 0.050 | 0.052 | 0.011 |
| Acetaldehyde | 84 | 0 | 0.505 | 0.730 | 0.970 | 1.333 | 1.815 | 2.482 | 0.380 | 1.093 | 0.474 |
| Acetone | 84 | 0 | 1.290 | 2.206 | 3.280 | 4.259 | 5.041 | 6.173 | 0.699 | 3.237 | 1.320 |
| Acetylene | 168 | 0 | 0.158 | 0.300 | 0.529 | 0.861 | 1.342 | 3.044 | 0.100 | 0.681 | 0.566 |
| Benzene | 168 | 0 | 0.130 | 0.197 | 0.320 | 0.502 | 0.794 | 2.223 | 0.104 | 0.406 | 0.311 |
| Butane | 168 | 0 | 0.163 | 0.317 | 0.603 | 1.113 | 2.130 | 9.076 | 0.116 | 0.976 | 1.219 |
| Carbontetrachloride | 168 | 0 | 0.536 | 0.634 | 0.702 | 0.727 | 0.768 | 0.822 | 0.515 | 0.683 | 0.076 |
| Chloroform | 168 | 0 | 0.065 | 0.078 | 0.099 | 0.112 | 0.123 | 0.171 | 0.061 | 0.098 | 0.022 |
| Chloromethane | 168 | 0 | 0.983 | 1.059 | 1.134 | 1.179 | 1.248 | 1.770 | 0.809 | 1.132 | 0.113 |
| cis-1,2-Dimethylcyclohexane | 167 | 156 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.395 | 0.050 | 0.056 | 0.035 |
| cis-1,3-Dimethylcyclohexane | 168 | 143 | 0.050 | 0.050 | 0.050 | 0.050 | 0.081 | 1.148 | 0.050 | 0.070 | 0.096 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 168 | 157 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.496 | 0.050 | 0.055 | 0.036 |
| cis-2-Butene | 168 | 160 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.173 | 0.050 | 0.052 | 0.011 |
| cis-2-Hexene | 168 | 168 | | | | | | | | | |
| cis-2-Pentene | 168 | 94 | 0.050 | 0.050 | 0.050 | 0.054 | 0.062 | 0.080 | 0.050 | 0.053 | 0.006 |
| cis-3-Methyl-2-pentene | 168 | 168 | | | | | | | | | |
| cis-4-Methyl-2-pentene | 168 | 168 | | | | | | | | | |
| Cyclohexane | 168 | 113 | 0.050 | 0.050 | 0.050 | 0.065 | 0.104 | 0.315 | 0.050 | 0.068 | 0.043 |
| Cyclopentane | 168 | 71 | 0.050 | 0.050 | 0.064 | 0.100 | 0.140 | 0.374 | 0.050 | 0.084 | 0.056 |
| Cyclopentene | 168 | 168 | | | | | | | | | |
| Decane | 168 | 117 | 0.050 | 0.050 | 0.050 | 0.053 | 0.129 | 20.211 | 0.050 | 0.280 | 1.881 |
| Dichloromethane | 168 | 0 | 0.158 | 0.190 | 0.220 | 0.320 | 0.582 | 3.474 | 0.133 | 0.365 | 0.449 |
| Dodecane | 168 | 127 | 0.050 | 0.050 | 0.050 | 0.050 | 0.071 | 0.379 | 0.050 | 0.060 | 0.039 |
| Ethane | 168 | 0 | 0.803 | 1.080 | 1.906 | 2.603 | 3.824 | 8.772 | 0.697 | 2.105 | 1.283 |
| Ethylbenzene | 168 | 63 | 0.050 | 0.050 | 0.066 | 0.160 | 0.323 | 2.169 | 0.050 | 0.183 | 0.330 |
| Ethylene | 168 | 0 | 0.109 | 0.158 | 0.292 | 0.530 | 0.999 | 3.133 | 0.090 | 0.462 | 0.523 |

## Table 40: VOC Annual Statistics at Egbert (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Formaldehyde | 84 | 0 | 0.675 | 1.171 | 1.808 | 2.599 | 3.161 | 3.672 | 0.311 | 1.903 | 0.847 |
| Freon11 | 168 | 0 | 1.624 | 1.717 | 1.793 | 1.892 | 1.969 | 2.212 | 1.316 | 1.807 | 0.140 |
| Freon22 | 168 | 0 | 0.419 | 0.520 | 0.568 | 0.631 | 0.734 | 6.935 | 0.307 | 0.641 | 0.566 |
| Heptane | 168 | 22 | 0.050 | 0.074 | 0.096 | 0.136 | 0.235 | 0.879 | 0.050 | 0.131 | 0.121 |
| Hexane | 168 | 12 | 0.050 | 0.085 | 0.142 | 0.233 | 0.393 | 1.350 | 0.050 | 0.205 | 0.210 |
| Indane | 168 | 158 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.197 | 0.050 | 0.052 | 0.014 |
| Isobutane | 168 | 1 | 0.085 | 0.147 | 0.296 | 0.491 | 0.945 | 3.013 | 0.050 | 0.444 | 0.510 |
| Isopentane | 168 | 0 | 0.154 | 0.241 | 0.574 | 0.875 | 1.602 | 4.872 | 0.083 | 0.773 | 0.790 |
| Isoprene | 168 | 59 | 0.050 | 0.050 | 0.109 | 0.411 | 0.694 | 1.550 | 0.050 | 0.270 | 0.310 |
| iso-Propylbenzene | 168 | 159 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.209 | 0.050 | 0.052 | 0.015 |
| m and p-Xylene | 168 | 11 | 0.050 | 0.085 | 0.147 | 0.343 | 0.933 | 6.292 | 0.050 | 0.476 | 0.984 |
| MEK | 84 | 3 | 0.144 | 0.305 | 0.509 | 0.853 | 1.159 | 3.364 | 0.050 | 0.630 | 0.528 |
| Methylcyclohexane | 168 | 115 | 0.050 | 0.050 | 0.050 | 0.061 | 0.124 | 1.074 | 0.050 | 0.084 | 0.112 |
| Methylcyclopentane | 168 | 74 | 0.050 | 0.050 | 0.060 | 0.107 | 0.188 | 0.610 | 0.050 | 0.099 | 0.095 |
| Naphthalene | 59 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.066 | 0.311 | 0.050 | 0.064 | 0.049 |
| n-Butylbenzene | 168 | 164 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.346 | 0.050 | 0.053 | 0.027 |
| Nonane | 167 | 107 | 0.050 | 0.050 | 0.050 | 0.066 | 0.188 | 10.138 | 0.050 | 0.212 | 1.016 |
| n-Propylbenzene | 168 | 138 | 0.050 | 0.050 | 0.050 | 0.050 | 0.085 | 0.592 | 0.050 | 0.064 | 0.056 |
| Octane | 168 | 95 | 0.050 | 0.050 | 0.050 | 0.069 | 0.172 | 1.328 | 0.050 | 0.090 | 0.126 |
| o-Xylene | 168 | 66 | 0.050 | 0.050 | 0.063 | 0.131 | 0.304 | 2.143 | 0.050 | 0.162 | 0.291 |
| p-Cymene | 168 | 101 | 0.050 | 0.050 | 0.050 | 0.065 | 0.090 | 0.299 | 0.050 | 0.063 | 0.031 |
| Pentane | 168 | 0 | 0.116 | 0.176 | 0.355 | 0.557 | 1.018 | 3.269 | 0.062 | 0.480 | 0.479 |
| Propane | 168 | 0 | 0.204 | 0.495 | 1.117 | 1.872 | 3.102 | 6.115 | 0.114 | 1.438 | 1.223 |
| Propionaldehyde | 84 | 1 | 0.101 | 0.148 | 0.204 | 0.282 | 0.392 | 0.645 | 0.050 | 0.226 | 0.114 |
| Propylene | 168 | 0 | 0.073 | 0.090 | 0.114 | 0.178 | 0.275 | 1.024 | 0.059 | 0.165 | 0.151 |
| Styrene | 168 | 146 | 0.050 | 0.050 | 0.050 | 0.050 | 0.054 | 0.604 | 0.050 | 0.063 | 0.064 |
| Toluene | 168 | 0 | 0.127 | 0.228 | 0.465 | 0.893 | 1.946 | 11.108 | 0.078 | 0.987 | 1.757 |
| trans-1,2-Dimethylcyclohexane | 168 | 146 | 0.050 | 0.050 | 0.050 | 0.050 | 0.065 | 1.255 | 0.050 | 0.067 | 0.102 |
| trans-1,4-Dimethylcyclohexane | 168 | 155 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.426 | 0.050 | 0.054 | 0.030 |
| trans-2-Butene | 168 | 161 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.189 | 0.050 | 0.052 | 0.012 |
| trans-2-Hexene | 168 | 168 |  |  |  |  |  |  |  |  |  |

## Table 40: VOC Annual Statistics at Egbert (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| trans-2-Pentene | 168 | 161 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.104 | 0.050 | 0.051 | 0.007 |
| trans-3-Methyl-2-pentene | 86 | 85 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.106 | 0.050 | 0.051 | 0.006 |
| Trichloroethylene | 168 | 43 | 0.050 | 0.050 | 0.067 | 0.088 | 0.178 | 1.116 | 0.050 | 0.108 | 0.150 |
| Undecane | 168 | 111 | 0.050 | 0.050 | 0.050 | 0.058 | 0.100 | 11.310 | 0.050 | 0.184 | 1.055 |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 41: VOC Annual Statistics at Etobicoke South (2000)

Unit: micrograms per cubic metre (μg/m$^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 1,1,1-Trichloroethane | 50 | 0 | 0.270 | 0.310 | 0.350 | 0.370 | 0.420 | 0.450 | 0.230 | 0.343 | 0.047 |
| 1,1,2,2-Tetrachloroethane | 50 | 12 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.056 | 0.010 |
| 1,1,2-Trichloroethane | 50 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| 1,1-Dichloroethane | 50 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,1-Dichloroethylene | 50 | 5 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.100 | 0.050 | 0.062 | 0.013 |
| 1,2,3-Trimethylbenzene | 50 | 0 | 0.120 | 0.180 | 0.240 | 0.320 | 0.570 | 0.720 | 0.080 | 0.278 | 0.145 |
| 1,2,4-Trichlorobenzene | 50 | 50 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 50 | 0 | 0.440 | 0.690 | 0.890 | 1.200 | 2.010 | 2.530 | 0.300 | 1.042 | 0.555 |
| 1,2-Dichlorobenzene | 50 | 50 | | | | | | | | | |
| 1,2-Dichloroethane | 50 | 0 | 0.060 | 0.070 | 0.090 | 0.100 | 0.160 | 0.260 | 0.050 | 0.098 | 0.043 |
| 1,2-Dichloropropane | 50 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,2-Diethylbenzene | 50 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.004 |
| 1,3,5-Trimethylbenzene | 50 | 0 | 0.130 | 0.220 | 0.290 | 0.400 | 0.660 | 0.840 | 0.090 | 0.336 | 0.176 |
| 1,3-Butadiene | 50 | 0 | 0.120 | 0.150 | 0.210 | 0.280 | 0.420 | 0.620 | 0.110 | 0.238 | 0.112 |
| 1,3-Dichlorobenzene | 50 | 50 | | | | | | | | | |
| 1,3-Diethylbenzene | 50 | 4 | 0.050 | 0.060 | 0.070 | 0.090 | 0.140 | 0.180 | 0.050 | 0.080 | 0.030 |
| 1,4-Dichlorobenzene | 50 | 0 | 0.080 | 0.100 | 0.140 | 0.190 | 0.310 | 0.410 | 0.070 | 0.163 | 0.078 |
| 1,4-Dichlorobutane | 50 | 50 | | | | | | | | | |
| 1,4-Diethylbenzene | 50 | 0 | 0.110 | 0.160 | 0.190 | 0.270 | 0.410 | 0.520 | 0.090 | 0.227 | 0.098 |
| 1-Butene/Isobutene | 50 | 0 | 0.430 | 0.540 | 0.690 | 1.000 | 1.340 | 2.400 | 0.370 | 0.821 | 0.426 |
| 1-Butyne | 50 | 50 | | | | | | | | | |
| 1-Decene | 50 | 6 | 0.050 | 0.050 | 0.090 | 0.130 | 0.180 | 0.280 | 0.050 | 0.101 | 0.055 |
| 1-Heptene | 50 | 1 | 0.070 | 0.100 | 0.130 | 0.180 | 0.230 | 0.400 | 0.050 | 0.145 | 0.070 |
| 1-Hexene | 50 | 0 | 0.150 | 0.180 | 0.220 | 0.260 | 0.360 | 0.580 | 0.140 | 0.243 | 0.090 |
| 1-Methylcyclohexene | 50 | 14 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.056 | 0.010 |
| 1-Methylcyclopentene | 50 | 3 | 0.050 | 0.050 | 0.070 | 0.090 | 0.140 | 0.180 | 0.050 | 0.077 | 0.032 |
| 1-Nonene | 50 | 12 | 0.050 | 0.050 | 0.060 | 0.090 | 0.120 | 0.170 | 0.050 | 0.073 | 0.029 |
| 1-Octene | 50 | 20 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.130 | 0.050 | 0.058 | 0.016 |
| 1-Pentene | 50 | 0 | 0.100 | 0.130 | 0.170 | 0.210 | 0.290 | 0.380 | 0.070 | 0.181 | 0.068 |
| 1-Propyne | 50 | 0 | 0.070 | 0.080 | 0.100 | 0.140 | 0.210 | 0.290 | 0.060 | 0.119 | 0.053 |
| 2,2,3-Trimethylbutane | 50 | 50 | | | | | | | | | |

## Table 41: VOC Annual Statistics at Etobicoke South (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P E R C E N T I L E S | | | | | | | | |
| 2,2,4-Trimethylpentane | 50 | 0 | 0.310 | 0.440 | 0.600 | 0.830 | 1.400 | 1.780 | 0.290 | 0.711 | 0.377 |
| 2,2,5-Trimethylhexane | 50 | 19 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.130 | 0.050 | 0.063 | 0.023 |
| 2,2-Dimethylbutane | 50 | 0 | 0.130 | 0.160 | 0.200 | 0.250 | 0.350 | 0.460 | 0.110 | 0.217 | 0.083 |
| 2,2-Dimethylhexane | 50 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.052 | 0.007 |
| 2,2-Dimethylpentane | 50 | 5 | 0.050 | 0.050 | 0.070 | 0.090 | 0.120 | 0.160 | 0.050 | 0.075 | 0.026 |
| 2,2-Dimethylpropane | 50 | 12 | 0.050 | 0.050 | 0.060 | 0.070 | 0.110 | 0.480 | 0.050 | 0.074 | 0.063 |
| 2,3,4-Trimethylpentane | 50 | 0 | 0.130 | 0.170 | 0.240 | 0.320 | 0.540 | 0.670 | 0.110 | 0.272 | 0.141 |
| 2,3-Dimethylbutane | 50 | 0 | 0.210 | 0.280 | 0.350 | 0.500 | 0.900 | 1.270 | 0.180 | 0.437 | 0.241 |
| 2,3-Dimethylpentane | 50 | 0 | 0.150 | 0.200 | 0.290 | 0.380 | 0.570 | 0.910 | 0.140 | 0.327 | 0.175 |
| 2,4-Dimethylhexane | 50 | 0 | 0.090 | 0.110 | 0.150 | 0.180 | 0.280 | 0.400 | 0.060 | 0.164 | 0.078 |
| 2,4-Dimethylpentane | 50 | 0 | 0.090 | 0.130 | 0.170 | 0.210 | 0.370 | 0.420 | 0.070 | 0.188 | 0.088 |
| 2,5-Dimethylhexane | 50 | 0 | 0.060 | 0.080 | 0.110 | 0.150 | 0.220 | 0.330 | 0.060 | 0.127 | 0.063 |
| 2-Ethyl-1-butene | 50 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.050 | 0.054 | 0.012 |
| 2-Ethyltoluene | 50 | 0 | 0.120 | 0.180 | 0.240 | 0.330 | 0.530 | 0.660 | 0.100 | 0.274 | 0.134 |
| 2-methyl-1-butene | 50 | 0 | 0.100 | 0.160 | 0.260 | 0.420 | 0.600 | 0.780 | 0.090 | 0.299 | 0.180 |
| 2-Methyl-2-butene | 50 | 0 | 0.160 | 0.220 | 0.320 | 0.450 | 0.710 | 1.190 | 0.100 | 0.374 | 0.214 |
| 2-Methylheptane | 50 | 0 | 0.120 | 0.190 | 0.260 | 0.440 | 0.930 | 1.110 | 0.110 | 0.371 | 0.267 |
| 2-Methylhexane | 50 | 0 | 0.250 | 0.360 | 0.540 | 0.720 | 1.010 | 1.660 | 0.230 | 0.595 | 0.321 |
| 2-Methylpentane | 50 | 0 | 0.750 | 0.970 | 1.330 | 1.760 | 3.300 | 4.560 | 0.540 | 1.571 | 0.886 |
| 3,6-Dimethyloctane | 50 | 22 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.140 | 0.050 | 0.065 | 0.024 |
| 3-Ethyltoluene | 50 | 0 | 0.280 | 0.400 | 0.560 | 0.760 | 1.240 | 1.590 | 0.190 | 0.640 | 0.337 |
| 3-Methyl-1-pentene | 50 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.050 | 0.054 | 0.009 |
| 3-Methylheptane | 50 | 0 | 0.090 | 0.160 | 0.230 | 0.390 | 0.680 | 0.950 | 0.090 | 0.305 | 0.205 |
| 3-Methylhexane | 50 | 0 | 0.290 | 0.400 | 0.610 | 0.860 | 1.200 | 1.920 | 0.250 | 0.695 | 0.388 |
| 3-Methylpentane | 50 | 0 | 0.490 | 0.670 | 0.840 | 1.340 | 2.180 | 3.060 | 0.440 | 1.075 | 0.615 |
| 4-Ethyltoluene | 50 | 0 | 0.170 | 0.240 | 0.310 | 0.420 | 0.640 | 0.870 | 0.130 | 0.349 | 0.167 |
| 4-Methyl-1-pentene | 50 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.050 | 0.053 | 0.008 |
| 4-Methylheptane | 50 | 2 | 0.050 | 0.070 | 0.110 | 0.180 | 0.330 | 0.440 | 0.050 | 0.143 | 0.096 |
| Acetylene | 50 | 0 | 1.167 | 1.494 | 2.246 | 3.363 | 5.718 | 8.058 | 1.088 | 2.792 | 1.705 |
| Benzene | 50 | 0 | 0.820 | 1.030 | 1.260 | 1.680 | 2.500 | 3.120 | 0.770 | 1.467 | 0.603 |
| Bromodichloromethane | 50 | 1 | 0.060 | 0.070 | 0.080 | 0.100 | 0.120 | 0.180 | 0.050 | 0.086 | 0.026 |

## Table 41: VOC Annual Statistics at Etobicoke South (2000)

Unit: micrograms per cubic metre (µg/m³)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 50 | 8 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.090 | 0.050 | 0.059 | 0.011 |
| Bromomethane | 50 | 0 | 0.120 | 0.140 | 0.160 | 0.180 | 0.200 | 0.260 | 0.100 | 0.161 | 0.031 |
| Butane | 50 | 0 | 1.480 | 2.180 | 4.160 | 6.730 | 15.170 | 47.730 | 1.160 | 6.409 | 7.599 |
| Carbontetrachloride | 50 | 0 | 0.570 | 0.690 | 0.720 | 0.750 | 0.810 | 0.850 | 0.460 | 0.712 | 0.073 |
| Chlorobenzene | 50 | 50 |  |  |  |  |  |  |  |  |  |
| Chloroethane | 50 | 0 | 0.060 | 0.070 | 0.090 | 0.120 | 0.280 | 0.560 | 0.050 | 0.127 | 0.104 |
| Chloroform | 50 | 0 | 0.090 | 0.120 | 0.150 | 0.180 | 0.240 | 0.450 | 0.090 | 0.164 | 0.068 |
| Chloromethane | 50 | 0 | 0.960 | 1.130 | 1.200 | 1.280 | 1.410 | 1.580 | 0.890 | 1.205 | 0.143 |
| cis-1,2-Dichloroethylene | 50 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.051 | 0.005 |
| cis-1,2-Dimethylcyclohexane | 50 | 23 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.170 | 0.050 | 0.059 | 0.022 |
| cis-1,3-Dichloropropene | 50 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.680 | 0.050 | 0.063 | 0.089 |
| cis-1,3-Dimethylcyclohexane | 50 | 3 | 0.050 | 0.080 | 0.120 | 0.240 | 0.390 | 0.710 | 0.050 | 0.179 | 0.147 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 50 | 24 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.260 | 0.050 | 0.067 | 0.038 |
| cis-2-Butene | 50 | 0 | 0.090 | 0.130 | 0.180 | 0.280 | 0.450 | 0.780 | 0.080 | 0.233 | 0.154 |
| cis-2-Heptene | 50 | 26 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.006 |
| cis-2-Hexene | 50 | 21 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.130 | 0.050 | 0.061 | 0.018 |
| cis-2-Pentene | 50 | 0 | 0.090 | 0.120 | 0.150 | 0.200 | 0.290 | 0.460 | 0.060 | 0.173 | 0.076 |
| cis-3-Methyl-2-pentene | 50 | 19 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.150 | 0.050 | 0.067 | 0.027 |
| cis-4-Methyl-2-pentene | 50 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.005 |
| Cyclohexane | 50 | 0 | 0.120 | 0.170 | 0.220 | 0.300 | 0.460 | 2.360 | 0.100 | 0.296 | 0.325 |
| Cyclohexene | 50 | 25 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.006 |
| Cyclopentane | 50 | 0 | 0.150 | 0.220 | 0.280 | 0.370 | 0.610 | 1.100 | 0.140 | 0.333 | 0.192 |
| Cyclopentene | 50 | 17 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.150 | 0.050 | 0.065 | 0.025 |
| Decane | 50 | 0 | 0.220 | 0.390 | 0.570 | 0.900 | 1.460 | 2.020 | 0.170 | 0.715 | 0.459 |
| Dibromochloromethane | 50 | 5 | 0.050 | 0.050 | 0.060 | 0.060 | 0.080 | 0.090 | 0.050 | 0.059 | 0.012 |
| Dibromomethane | 50 | 0 | 0.080 | 0.090 | 0.100 | 0.110 | 0.130 | 0.160 | 0.070 | 0.102 | 0.018 |
| Dichloromethane | 50 | 0 | 0.520 | 1.090 | 1.980 | 3.750 | 12.300 | 35.920 | 0.420 | 4.039 | 6.015 |
| Dodecane | 50 | 0 | 0.090 | 0.140 | 0.200 | 0.260 | 0.440 | 0.690 | 0.060 | 0.233 | 0.131 |
| EDB | 50 | 6 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.058 | 0.009 |
| Ethane | 50 | 0 | 1.785 | 2.338 | 3.539 | 4.715 | 7.234 | 10.265 | 1.506 | 3.962 | 2.083 |
| Ethylbenzene | 50 | 0 | 0.480 | 0.810 | 1.190 | 1.670 | 2.700 | 4.980 | 0.350 | 1.424 | 0.869 |

## Table 41: VOC Annual Statistics at Etobicoke South (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Ethylbromide | 50 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| Ethylene | 50 | 0 | 1.444 | 1.793 | 2.488 | 3.625 | 6.776 | 8.696 | 1.288 | 3.085 | 1.862 |
| Freon11 | 50 | 0 | 1.540 | 1.740 | 1.850 | 1.970 | 2.070 | 2.310 | 1.250 | 1.839 | 0.195 |
| Freon114 | 50 | 0 | 0.190 | 0.220 | 0.230 | 0.250 | 0.270 | 0.300 | 0.160 | 0.231 | 0.028 |
| Freon12 | 50 | 0 | 2.470 | 2.730 | 2.900 | 3.100 | 3.220 | 3.440 | 2.220 | 2.903 | 0.251 |
| Freon22 | 50 | 0 | 0.690 | 0.810 | 0.930 | 1.210 | 1.710 | 3.050 | 0.640 | 1.095 | 0.489 |
| Heptane | 50 | 0 | 0.280 | 0.380 | 0.530 | 0.780 | 1.060 | 2.240 | 0.240 | 0.621 | 0.362 |
| Hexachlorobutadiene | 50 | 50 |  |  |  |  |  |  |  |  |  |
| Hexane | 50 | 0 | 0.540 | 0.750 | 1.050 | 1.700 | 2.190 | 3.450 | 0.450 | 1.259 | 0.695 |
| Hexylbenzene | 34 | 17 | 0.050 | 0.050 | 0.050 | 0.070 | 0.130 | 0.200 | 0.050 | 0.069 | 0.035 |
| Indane | 50 | 0 | 0.070 | 0.100 | 0.120 | 0.150 | 0.230 | 0.320 | 0.050 | 0.132 | 0.056 |
| Isobutane | 50 | 0 | 0.730 | 1.130 | 2.100 | 3.930 | 8.850 | 23.330 | 0.590 | 3.523 | 4.316 |
| iso-Butylbenzene | 50 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.006 |
| Isopentane | 50 | 0 | 1.870 | 2.550 | 3.330 | 4.300 | 8.130 | 9.370 | 1.470 | 3.989 | 2.053 |
| Isoprene | 50 | 0 | 0.080 | 0.120 | 0.190 | 0.260 | 0.400 | 0.590 | 0.050 | 0.208 | 0.117 |
| iso-Propylbenzene | 50 | 3 | 0.050 | 0.070 | 0.080 | 0.100 | 0.150 | 0.200 | 0.050 | 0.090 | 0.033 |
| m and p-Xylene | 50 | 0 | 1.320 | 2.440 | 3.560 | 5.320 | 8.750 | 17.130 | 0.870 | 4.401 | 2.957 |
| Methylcyclohexane | 50 | 0 | 0.130 | 0.180 | 0.290 | 0.420 | 0.730 | 1.570 | 0.110 | 0.363 | 0.265 |
| Methylcyclopentane | 50 | 0 | 0.310 | 0.440 | 0.560 | 0.830 | 1.220 | 1.790 | 0.240 | 0.648 | 0.318 |
| n-Butylbenzene | 50 | 3 | 0.050 | 0.060 | 0.070 | 0.090 | 0.130 | 0.170 | 0.050 | 0.078 | 0.030 |
| Nonane | 50 | 0 | 0.160 | 0.230 | 0.340 | 0.520 | 0.870 | 1.040 | 0.130 | 0.406 | 0.232 |
| n-Propylbenzene | 50 | 0 | 0.120 | 0.160 | 0.210 | 0.280 | 0.450 | 0.560 | 0.090 | 0.236 | 0.111 |
| Octane | 50 | 0 | 0.130 | 0.200 | 0.290 | 0.470 | 0.750 | 1.220 | 0.120 | 0.384 | 0.263 |
| o-Xylene | 50 | 0 | 0.420 | 0.730 | 1.100 | 1.370 | 2.260 | 3.980 | 0.330 | 1.256 | 0.716 |
| p-Cymene | 50 | 3 | 0.050 | 0.060 | 0.090 | 0.140 | 0.170 | 0.360 | 0.050 | 0.108 | 0.066 |
| Pentane | 50 | 0 | 1.160 | 1.650 | 2.250 | 3.020 | 4.940 | 5.440 | 0.960 | 2.594 | 1.269 |
| Propane | 50 | 0 | 1.800 | 2.620 | 4.170 | 6.620 | 8.750 | 10.700 | 1.280 | 4.791 | 2.621 |
| Propylene | 50 | 0 | 0.520 | 0.690 | 0.880 | 1.250 | 2.100 | 2.670 | 0.440 | 1.095 | 0.569 |
| sec-Butylbenzene | 50 | 25 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.050 | 0.056 | 0.014 |
| Styrene | 50 | 0 | 0.190 | 0.380 | 0.970 | 4.290 | 10.920 | 19.100 | 0.090 | 3.481 | 4.946 |
| tert-Butylbenzene | 50 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |

## Table 41: VOC Annual Statistics at Etobicoke South (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | PERCENTILES |  |  |  |  |  |  |  |  |
| Tetrachloroethylene | 50 | 0 | 0.220 | 0.350 | 0.550 | 0.860 | 1.450 | 6.610 | 0.190 | 0.781 | 0.941 |
| Toluene | 50 | 0 | 2.010 | 3.610 | 5.700 | 9.810 | 14.560 | 19.350 | 1.650 | 6.991 | 4.331 |
| trans-1,2-Dichloroethylene | 50 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,2-Dimethylcyclohexane | 50 | 8 | 0.050 | 0.050 | 0.080 | 0.150 | 0.230 | 0.500 | 0.050 | 0.116 | 0.091 |
| trans-1,3-Dichloropropene | 50 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.570 | 0.050 | 0.060 | 0.074 |
| trans-1,4-Dimethylcyclohexane | 50 | 18 | 0.050 | 0.050 | 0.060 | 0.090 | 0.170 | 0.310 | 0.050 | 0.083 | 0.056 |
| trans-2-Butene | 50 | 0 | 0.100 | 0.130 | 0.190 | 0.360 | 0.530 | 1.100 | 0.090 | 0.275 | 0.210 |
| trans-2-Heptene | 50 | 37 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| trans-2-Hexene | 50 | 22 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.130 | 0.050 | 0.064 | 0.024 |
| trans-2-Pentene | 50 | 0 | 0.100 | 0.140 | 0.170 | 0.260 | 0.420 | 0.670 | 0.060 | 0.219 | 0.127 |
| trans-3-Heptene | 50 | 50 |  |  |  |  |  |  |  |  |  |
| trans-3-Methyl-2-pentene | 50 | 24 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.140 | 0.050 | 0.062 | 0.021 |
| trans-4-Methyl-2-pentene | 50 | 50 |  |  |  |  |  |  |  |  |  |
| Trichloroethylene | 50 | 0 | 0.100 | 0.190 | 0.340 | 0.630 | 1.130 | 2.080 | 0.100 | 0.486 | 0.407 |
| Undecane | 50 | 0 | 0.170 | 0.290 | 0.410 | 0.590 | 0.970 | 1.310 | 0.140 | 0.486 | 0.283 |
| Vinylchloride | 50 | 50 |  |  |  |  |  |  |  |  |  |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 42: VOC Annual Statistics at Etobicoke West (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | 60 | 0 | 0.270 | 0.310 | 0.340 | 0.360 | 0.410 | 0.620 | 0.190 | 0.339 | 0.060 |
| 1,1,2,2-Tetrachloroethane | 60 | 9 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.057 | 0.010 |
| 1,1,2-Trichloroethane | 60 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.004 |
| 1,1-Dichloroethane | 60 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,1-Dichloroethylene | 60 | 2 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.100 | 0.050 | 0.064 | 0.013 |
| 1,2,3-Trimethylbenzene | 60 | 0 | 0.100 | 0.140 | 0.210 | 0.320 | 0.570 | 1.210 | 0.070 | 0.271 | 0.225 |
| 1,2,4-Trichlorobenzene | 60 | 60 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 60 | 0 | 0.310 | 0.500 | 0.710 | 1.110 | 2.100 | 4.340 | 0.260 | 1.004 | 0.866 |
| 1,2-Dichlorobenzene | 60 | 59 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.240 | 0.050 | 0.053 | 0.025 |
| 1,2-Dichloroethane | 60 | 0 | 0.060 | 0.070 | 0.080 | 0.090 | 0.100 | 0.170 | 0.060 | 0.083 | 0.019 |
| 1,2-Dichloropropane | 60 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,2-Diethylbenzene | 60 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.050 | 0.052 | 0.009 |
| 1,3,5-Trimethylbenzene | 60 | 0 | 0.100 | 0.160 | 0.230 | 0.350 | 0.660 | 1.430 | 0.090 | 0.321 | 0.277 |
| 1,3-Butadiene | 60 | 0 | 0.080 | 0.110 | 0.150 | 0.210 | 0.370 | 0.770 | 0.070 | 0.193 | 0.144 |
| 1,3-Dichlorobenzene | 60 | 60 | | | | | | | | | |
| 1,3-Diethylbenzene | 60 | 9 | 0.050 | 0.050 | 0.070 | 0.090 | 0.130 | 0.300 | 0.050 | 0.082 | 0.050 |
| 1,4-Dichlorobenzene | 60 | 1 | 0.070 | 0.110 | 0.160 | 0.250 | 0.400 | 0.720 | 0.050 | 0.199 | 0.143 |
| 1,4-Dichlorobutane | 60 | 60 | | | | | | | | | |
| 1,4-Diethylbenzene | 60 | 1 | 0.110 | 0.130 | 0.180 | 0.280 | 0.440 | 0.930 | 0.050 | 0.230 | 0.161 |
| 1-Butene/Isobutene | 60 | 0 | 0.290 | 0.400 | 0.560 | 0.650 | 1.240 | 3.180 | 0.250 | 0.686 | 0.585 |
| 1-Butyne | 60 | 58 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1-Decene | 60 | 7 | 0.050 | 0.050 | 0.070 | 0.110 | 0.190 | 0.430 | 0.050 | 0.100 | 0.076 |
| 1-Heptene | 60 | 0 | 0.070 | 0.090 | 0.120 | 0.160 | 0.190 | 1.020 | 0.050 | 0.153 | 0.157 |
| 1-Hexene | 60 | 0 | 0.140 | 0.170 | 0.200 | 0.230 | 0.350 | 0.600 | 0.120 | 0.223 | 0.100 |
| 1-Methylcyclohexene | 60 | 16 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.110 | 0.050 | 0.059 | 0.015 |
| 1-Methylcyclopentene | 60 | 9 | 0.050 | 0.050 | 0.060 | 0.080 | 0.120 | 0.280 | 0.050 | 0.076 | 0.049 |
| 1-Nonene | 60 | 23 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.260 | 0.050 | 0.067 | 0.039 |
| 1-Octene | 60 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.350 | 0.050 | 0.060 | 0.041 |
| 1-Pentene | 60 | 0 | 0.080 | 0.110 | 0.150 | 0.200 | 0.310 | 0.630 | 0.070 | 0.176 | 0.117 |
| 1-Propyne | 60 | 3 | 0.050 | 0.060 | 0.080 | 0.110 | 0.190 | 0.430 | 0.050 | 0.108 | 0.079 |
| 2,2,3-Trimethylbutane | 60 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.050 | 0.051 | 0.007 |

## Table 42: VOC Annual Statistics at Etobicoke West (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 60 | 0 | 0.200 | 0.310 | 0.440 | 0.710 | 1.050 | 3.170 | 0.120 | 0.618 | 0.579 |
| 2,2,5-Trimethylhexane | 60 | 35 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.220 | 0.050 | 0.063 | 0.035 |
| 2,2-Dimethylbutane | 60 | 0 | 0.100 | 0.140 | 0.170 | 0.210 | 0.300 | 0.670 | 0.080 | 0.200 | 0.117 |
| 2,2-Dimethylhexane | 60 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.210 | 0.050 | 0.055 | 0.023 |
| 2,2-Dimethylpentane | 60 | 15 | 0.050 | 0.050 | 0.050 | 0.070 | 0.120 | 0.550 | 0.050 | 0.075 | 0.070 |
| 2,2-Dimethylpropane | 60 | 20 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.160 | 0.050 | 0.061 | 0.022 |
| 2,3,4-Trimethylpentane | 60 | 0 | 0.090 | 0.120 | 0.170 | 0.270 | 0.410 | 1.190 | 0.050 | 0.238 | 0.224 |
| 2,3-Dimethylbutane | 60 | 0 | 0.120 | 0.220 | 0.280 | 0.420 | 0.800 | 2.350 | 0.070 | 0.403 | 0.419 |
| 2,3-Dimethylpentane | 60 | 0 | 0.130 | 0.170 | 0.230 | 0.300 | 0.500 | 2.060 | 0.090 | 0.310 | 0.305 |
| 2,4-Dimethylhexane | 60 | 0 | 0.060 | 0.090 | 0.120 | 0.160 | 0.250 | 0.760 | 0.050 | 0.151 | 0.127 |
| 2,4-Dimethylpentane | 60 | 1 | 0.060 | 0.100 | 0.130 | 0.180 | 0.270 | 1.200 | 0.050 | 0.175 | 0.180 |
| 2,5-Dimethylhexane | 60 | 3 | 0.050 | 0.060 | 0.090 | 0.120 | 0.190 | 0.610 | 0.050 | 0.116 | 0.102 |
| 2-Ethyl-1-butene | 60 | 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.220 | 0.050 | 0.058 | 0.033 |
| 2-Ethyltoluene | 60 | 0 | 0.100 | 0.140 | 0.190 | 0.300 | 0.550 | 1.160 | 0.080 | 0.263 | 0.220 |
| 2-methyl-1-butene | 60 | 0 | 0.080 | 0.130 | 0.180 | 0.270 | 0.540 | 0.980 | 0.050 | 0.239 | 0.203 |
| 2-Methyl-2-butene | 60 | 0 | 0.100 | 0.150 | 0.250 | 0.380 | 0.700 | 2.220 | 0.090 | 0.365 | 0.404 |
| 2-Methylheptane | 60 | 0 | 0.100 | 0.150 | 0.190 | 0.270 | 0.580 | 1.300 | 0.080 | 0.275 | 0.246 |
| 2-Methylhexane | 60 | 0 | 0.180 | 0.320 | 0.410 | 0.570 | 1.000 | 4.310 | 0.120 | 0.581 | 0.640 |
| 2-Methylpentane | 60 | 0 | 0.500 | 0.750 | 0.980 | 1.420 | 2.580 | 7.550 | 0.350 | 1.394 | 1.357 |
| 3,6-Dimethyloctane | 60 | 36 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.320 | 0.050 | 0.065 | 0.047 |
| 3-Ethyltoluene | 60 | 0 | 0.190 | 0.300 | 0.440 | 0.670 | 1.240 | 2.840 | 0.140 | 0.608 | 0.545 |
| 3-Methyl-1-pentene | 60 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.130 | 0.050 | 0.055 | 0.017 |
| 3-Methylheptane | 60 | 0 | 0.090 | 0.130 | 0.170 | 0.230 | 0.500 | 1.110 | 0.050 | 0.236 | 0.217 |
| 3-Methylhexane | 60 | 0 | 0.210 | 0.370 | 0.480 | 0.650 | 1.290 | 5.680 | 0.130 | 0.700 | 0.824 |
| 3-Methylpentane | 60 | 0 | 0.300 | 0.530 | 0.640 | 0.910 | 1.540 | 5.710 | 0.250 | 0.907 | 0.876 |
| 4-Ethyltoluene | 60 | 0 | 0.150 | 0.190 | 0.250 | 0.380 | 0.670 | 1.440 | 0.100 | 0.336 | 0.269 |
| 4-Methyl-1-pentene | 60 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.170 | 0.050 | 0.057 | 0.022 |
| 4-Methylheptane | 60 | 8 | 0.050 | 0.060 | 0.080 | 0.110 | 0.210 | 0.470 | 0.050 | 0.106 | 0.090 |
| Acetylene | 60 | 0 | 1.065 | 1.485 | 1.940 | 3.113 | 9.150 | 24.596 | 0.669 | 3.663 | 4.969 |
| Benzene | 60 | 0 | 0.530 | 0.800 | 1.040 | 1.520 | 2.260 | 5.010 | 0.430 | 1.335 | 0.953 |
| Bromodichloromethane | 60 | 1 | 0.060 | 0.070 | 0.080 | 0.100 | 0.140 | 0.200 | 0.050 | 0.093 | 0.036 |

## Table 42: VOC Annual Statistics at Etobicoke West (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 60 | 4 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.100 | 0.050 | 0.062 | 0.013 |
| Bromomethane | 60 | 0 | 0.120 | 0.140 | 0.150 | 0.170 | 0.180 | 0.220 | 0.110 | 0.154 | 0.023 |
| Butane | 60 | 0 | 0.790 | 2.160 | 3.060 | 4.430 | 9.240 | 27.050 | 0.680 | 4.618 | 5.363 |
| Carbontetrachloride | 60 | 0 | 0.580 | 0.670 | 0.710 | 0.780 | 0.820 | 1.000 | 0.510 | 0.720 | 0.090 |
| Chlorobenzene | 60 | 60 | | | | | | | | | |
| Chloroethane | 60 | 0 | 0.060 | 0.080 | 0.090 | 0.120 | 0.160 | 0.710 | 0.060 | 0.114 | 0.093 |
| Chloroform | 60 | 0 | 0.100 | 0.110 | 0.130 | 0.170 | 0.220 | 0.340 | 0.080 | 0.148 | 0.051 |
| Chloromethane | 60 | 0 | 0.980 | 1.090 | 1.160 | 1.230 | 1.360 | 1.540 | 0.860 | 1.166 | 0.133 |
| cis-1,2-Dichloroethylene | 60 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.050 | 0.003 |
| cis-1,2-Dimethylcyclohexane | 60 | 29 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.180 | 0.050 | 0.061 | 0.030 |
| cis-1,3-Dichloropropene | 60 | 58 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.520 | 0.050 | 0.059 | 0.062 |
| cis-1,3-Dimethylcyclohexane | 60 | 2 | 0.050 | 0.070 | 0.090 | 0.130 | 0.290 | 0.730 | 0.050 | 0.142 | 0.143 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 60 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.260 | 0.050 | 0.066 | 0.047 |
| cis-2-Butene | 60 | 0 | 0.070 | 0.110 | 0.150 | 0.200 | 0.350 | 1.170 | 0.060 | 0.202 | 0.211 |
| cis-2-Heptene | 60 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.140 | 0.050 | 0.053 | 0.013 |
| cis-2-Hexene | 60 | 37 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.230 | 0.050 | 0.063 | 0.036 |
| cis-2-Pentene | 60 | 0 | 0.070 | 0.110 | 0.130 | 0.180 | 0.310 | 0.790 | 0.060 | 0.171 | 0.136 |
| cis-3-Methyl-2-pentene | 60 | 31 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.280 | 0.050 | 0.066 | 0.046 |
| cis-4-Methyl-2-pentene | 60 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.006 |
| Cyclohexane | 60 | 0 | 0.100 | 0.140 | 0.190 | 0.250 | 0.430 | 1.560 | 0.080 | 0.255 | 0.249 |
| Cyclohexene | 60 | 30 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.050 | 0.054 | 0.012 |
| Cyclopentane | 60 | 0 | 0.130 | 0.170 | 0.220 | 0.320 | 0.590 | 1.850 | 0.070 | 0.326 | 0.347 |
| Cyclopentene | 60 | 23 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.230 | 0.050 | 0.065 | 0.037 |
| Decane | 60 | 0 | 0.160 | 0.280 | 0.420 | 0.690 | 1.380 | 3.610 | 0.100 | 0.617 | 0.620 |
| Dibromochloromethane | 60 | 3 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.100 | 0.050 | 0.063 | 0.014 |
| Dibromomethane | 60 | 0 | 0.080 | 0.090 | 0.100 | 0.110 | 0.140 | 0.200 | 0.070 | 0.104 | 0.022 |
| Dichloromethane | 60 | 0 | 0.400 | 0.540 | 0.830 | 1.980 | 4.210 | 10.280 | 0.250 | 1.528 | 1.781 |
| Dodecane | 60 | 2 | 0.060 | 0.140 | 0.200 | 0.300 | 0.510 | 1.300 | 0.050 | 0.252 | 0.209 |
| EDB | 60 | 5 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.050 | 0.060 | 0.010 |
| Ethane | 60 | 0 | 1.587 | 2.312 | 3.239 | 4.254 | 6.618 | 13.127 | 1.183 | 3.676 | 2.145 |
| Ethylbenzene | 60 | 0 | 0.390 | 0.620 | 0.800 | 1.170 | 2.450 | 7.490 | 0.250 | 1.192 | 1.261 |

## Table 42: VOC Annual Statistics at Etobicoke West (2000)

Unit: micrograms per cubic metre (μg/m$^3$)

| | # of | | P E R C E N T I L E S | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Ethylbromide | 60 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| Ethylene | 60 | 0 | 0.993 | 1.343 | 1.781 | 2.853 | 6.132 | 10.258 | 0.747 | 2.563 | 2.089 |
| Freon11 | 60 | 0 | 1.570 | 1.690 | 1.840 | 2.000 | 2.130 | 2.930 | 1.480 | 1.862 | 0.248 |
| Freon114 | 60 | 0 | 0.190 | 0.210 | 0.230 | 0.250 | 0.270 | 0.300 | 0.180 | 0.232 | 0.028 |
| Freon12 | 60 | 0 | 2.320 | 2.640 | 2.860 | 3.050 | 3.330 | 3.740 | 2.150 | 2.848 | 0.327 |
| Freon22 | 60 | 0 | 0.580 | 0.690 | 0.750 | 0.920 | 1.270 | 2.360 | 0.460 | 0.872 | 0.346 |
| Heptane | 60 | 0 | 0.220 | 0.360 | 0.440 | 0.620 | 1.080 | 4.690 | 0.200 | 0.636 | 0.682 |
| Hexachlorobutadiene | 60 | 60 | | | | | | | | | |
| Hexane | 60 | 0 | 0.360 | 0.620 | 0.800 | 1.040 | 2.120 | 8.820 | 0.300 | 1.166 | 1.357 |
| Hexylbenzene | 44 | 21 | 0.050 | 0.050 | 0.060 | 0.100 | 0.140 | 0.880 | 0.050 | 0.120 | 0.182 |
| Indane | 60 | 1 | 0.060 | 0.070 | 0.100 | 0.150 | 0.230 | 0.510 | 0.050 | 0.129 | 0.092 |
| Isobutane | 60 | 0 | 0.640 | 1.220 | 1.680 | 2.280 | 5.360 | 18.080 | 0.470 | 2.542 | 2.971 |
| iso-Butylbenzene | 60 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.050 | 0.054 | 0.012 |
| Isopentane | 60 | 0 | 1.100 | 1.860 | 2.650 | 4.200 | 6.920 | 18.290 | 0.800 | 3.655 | 3.344 |
| Isoprene | 60 | 1 | 0.050 | 0.110 | 0.170 | 0.430 | 0.630 | 0.950 | 0.050 | 0.286 | 0.234 |
| iso-Propylbenzene | 60 | 4 | 0.050 | 0.060 | 0.070 | 0.100 | 0.160 | 0.320 | 0.050 | 0.087 | 0.054 |
| m and p-Xylene | 60 | 0 | 1.140 | 1.770 | 2.430 | 3.600 | 7.460 | 23.260 | 0.640 | 3.579 | 3.962 |
| Methylcyclohexane | 60 | 0 | 0.100 | 0.190 | 0.260 | 0.380 | 0.740 | 2.260 | 0.100 | 0.373 | 0.389 |
| Methylcyclopentane | 60 | 0 | 0.190 | 0.350 | 0.410 | 0.590 | 1.010 | 5.000 | 0.140 | 0.619 | 0.741 |
| n-Butylbenzene | 60 | 12 | 0.050 | 0.050 | 0.060 | 0.090 | 0.120 | 0.270 | 0.050 | 0.079 | 0.045 |
| Nonane | 60 | 0 | 0.130 | 0.170 | 0.230 | 0.390 | 0.840 | 1.590 | 0.070 | 0.351 | 0.327 |
| n-Propylbenzene | 60 | 0 | 0.090 | 0.120 | 0.160 | 0.260 | 0.460 | 1.000 | 0.070 | 0.228 | 0.186 |
| Octane | 60 | 0 | 0.130 | 0.170 | 0.210 | 0.310 | 0.620 | 1.460 | 0.100 | 0.314 | 0.283 |
| o-Xylene | 60 | 0 | 0.370 | 0.590 | 0.720 | 1.150 | 2.240 | 5.260 | 0.220 | 1.064 | 0.991 |
| p-Cymene | 60 | 2 | 0.050 | 0.070 | 0.100 | 0.140 | 0.270 | 0.830 | 0.050 | 0.135 | 0.137 |
| Pentane | 60 | 0 | 0.720 | 1.310 | 1.700 | 2.340 | 4.210 | 10.090 | 0.530 | 2.254 | 1.910 |
| Propane | 60 | 0 | 1.310 | 2.250 | 2.800 | 3.710 | 8.150 | 14.640 | 0.870 | 3.739 | 2.932 |
| Propylene | 60 | 0 | 0.330 | 0.490 | 0.660 | 0.880 | 1.800 | 3.770 | 0.300 | 0.887 | 0.773 |
| sec-Butylbenzene | 60 | 34 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.150 | 0.050 | 0.058 | 0.020 |
| Styrene | 60 | 0 | 0.110 | 0.180 | 0.270 | 0.620 | 1.300 | 5.570 | 0.090 | 0.567 | 0.835 |
| tert-Butylbenzene | 60 | 59 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.110 | 0.050 | 0.051 | 0.008 |

## Table 42: VOC Annual Statistics at Etobicoke West (2000)

Unit: micrograms per cubic metre (μg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethylene | 60 | 0 | 0.210 | 0.390 | 0.630 | 1.040 | 1.900 | 5.750 | 0.180 | 0.920 | 0.925 |
| Toluene | 60 | 0 | 2.040 | 3.160 | 4.210 | 7.010 | 13.830 | 88.470 | 0.980 | 7.336 | 11.826 |
| trans-1,2-Dichloroethylene | 60 | 58 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.050 | 0.003 |
| trans-1,2-Dimethylcyclohexane | 60 | 14 | 0.050 | 0.050 | 0.060 | 0.100 | 0.200 | 0.500 | 0.050 | 0.101 | 0.099 |
| trans-1,3-Dichloropropene | 60 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.430 | 0.050 | 0.057 | 0.049 |
| trans-1,4-Dimethylcyclohexane | 60 | 36 | 0.050 | 0.050 | 0.050 | 0.060 | 0.130 | 0.310 | 0.050 | 0.071 | 0.055 |
| trans-2-Butene | 60 | 0 | 0.070 | 0.110 | 0.170 | 0.220 | 0.390 | 1.440 | 0.060 | 0.230 | 0.261 |
| trans-2-Heptene | 60 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.120 | 0.050 | 0.053 | 0.012 |
| trans-2-Hexene | 60 | 29 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.270 | 0.050 | 0.066 | 0.045 |
| trans-2-Pentene | 60 | 0 | 0.060 | 0.110 | 0.140 | 0.220 | 0.390 | 1.130 | 0.050 | 0.206 | 0.210 |
| trans-3-Heptene | 60 | 60 | | | | | | | | | |
| trans-3-Methyl-2-pentene | 60 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.270 | 0.050 | 0.065 | 0.044 |
| trans-4-Methyl-2-pentene | 60 | 60 | | | | | | | | | |
| Trichloroethylene | 60 | 0 | 0.120 | 0.270 | 0.530 | 0.810 | 1.210 | 4.060 | 0.110 | 0.678 | 0.698 |
| Undecane | 60 | 1 | 0.130 | 0.260 | 0.370 | 0.550 | 0.970 | 2.840 | 0.050 | 0.474 | 0.451 |
| Vinylchloride | 60 | 59 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 43: VOC Annual Statistics at Hamilton (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane |  | 0 | 0.290 | 0.300 | 0.350 | 0.380 | 0.410 | 0.910 | 0.190 | 0.357 | 0.105 |
| 1,1,2,2-Tetrachloroethane | 53 | 7 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.056 | 0.009 |
| 1,1,2-Trichloroethane | 53 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,1-Dichloroethane | 53 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,1-Dichloroethylene | 53 | 3 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.080 | 0.050 | 0.064 | 0.010 |
| 1,2,3-Trimethylbenzene | 53 | 0 | 0.100 | 0.170 | 0.200 | 0.320 | 0.450 | 1.220 | 0.080 | 0.268 | 0.192 |
| 1,2,4-Trichlorobenzene | 53 | 53 |  |  |  |  |  |  |  |  |  |
| 1,2,4-Trimethylbenzene | 53 | 0 | 0.400 | 0.630 | 0.840 | 1.240 | 1.840 | 5.820 | 0.320 | 1.125 | 0.930 |
| 1,2-Dichlorobenzene | 53 | 53 |  |  |  |  |  |  |  |  |  |
| 1,2-Dichloroethane | 53 | 0 | 0.060 | 0.070 | 0.080 | 0.090 | 0.100 | 0.120 | 0.060 | 0.080 | 0.016 |
| 1,2-Dichloropropane | 53 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,2-Diethylbenzene | 53 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.050 | 0.052 | 0.008 |
| 1,3,5-Trimethylbenzene | 53 | 0 | 0.120 | 0.200 | 0.270 | 0.410 | 0.570 | 1.880 | 0.100 | 0.368 | 0.307 |
| 1,3-Butadiene | 53 | 0 | 0.090 | 0.120 | 0.150 | 0.220 | 0.310 | 0.720 | 0.080 | 0.188 | 0.111 |
| 1,3-Dichlorobenzene | 53 | 53 |  |  |  |  |  |  |  |  |  |
| 1,3-Diethylbenzene | 53 | 4 | 0.050 | 0.060 | 0.070 | 0.100 | 0.140 | 0.280 | 0.050 | 0.083 | 0.042 |
| 1,4-Dichlorobenzene | 53 | 0 | 0.110 | 0.150 | 0.160 | 0.220 | 0.370 | 0.900 | 0.070 | 0.211 | 0.136 |
| 1,4-Dichlorobutane | 53 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.004 |
| 1,4-Diethylbenzene | 53 | 0 | 0.100 | 0.160 | 0.190 | 0.280 | 0.370 | 0.860 | 0.090 | 0.233 | 0.137 |
| 1-Butene/Isobutene | 53 | 0 | 0.380 | 0.480 | 0.580 | 0.830 | 1.290 | 3.250 | 0.320 | 0.760 | 0.515 |
| 1-Butyne | 53 | 53 |  |  |  |  |  |  |  |  |  |
| 1-Decene | 51 | 11 | 0.050 | 0.050 | 0.070 | 0.090 | 0.140 | 0.260 | 0.050 | 0.081 | 0.044 |
| 1-Heptene | 53 | 0 | 0.070 | 0.100 | 0.130 | 0.190 | 0.240 | 1.100 | 0.060 | 0.178 | 0.175 |
| 1-Hexene | 53 | 0 | 0.140 | 0.180 | 0.220 | 0.240 | 0.330 | 0.630 | 0.130 | 0.233 | 0.091 |
| 1-Methylcyclohexene | 53 | 12 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.120 | 0.050 | 0.058 | 0.015 |
| 1-Methylcyclopentene | 53 | 1 | 0.050 | 0.060 | 0.070 | 0.080 | 0.130 | 0.370 | 0.050 | 0.087 | 0.058 |
| 1-Nonene | 53 | 17 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.410 | 0.050 | 0.071 | 0.052 |
| 1-Octene | 53 | 14 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.160 | 0.050 | 0.064 | 0.021 |
| 1-Pentene | 53 | 0 | 0.110 | 0.120 | 0.180 | 0.240 | 0.350 | 0.720 | 0.100 | 0.209 | 0.122 |
| 1-Propyne | 53 | 1 | 0.050 | 0.070 | 0.090 | 0.120 | 0.170 | 0.420 | 0.050 | 0.106 | 0.063 |
| 2,2,3-Trimethylbutane | 53 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.006 |

## Table 43: VOC Annual Statistics at Hamilton (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 2,2,4-Trimethylpentane | 53 | 0 | 0.340 | 0.430 | 0.600 | 0.850 | 1.340 | 8.290 | 0.210 | 0.876 | 1.159 |
| 2,2,5-Trimethylhexane | 53 | 25 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.370 | 0.050 | 0.067 | 0.050 |
| 2,2-Dimethylbutane | 53 | 0 | 0.110 | 0.160 | 0.190 | 0.270 | 0.340 | 0.810 | 0.110 | 0.232 | 0.136 |
| 2,2-Dimethylhexane | 53 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.180 | 0.050 | 0.055 | 0.022 |
| 2,2-Dimethylpentane | 53 | 10 | 0.050 | 0.050 | 0.060 | 0.090 | 0.130 | 0.430 | 0.050 | 0.082 | 0.061 |
| 2,2-Dimethylpropane | 53 | 12 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.280 | 0.050 | 0.078 | 0.049 |
| 2,3,4-Trimethylpentane | 53 | 0 | 0.110 | 0.170 | 0.210 | 0.310 | 0.470 | 2.580 | 0.070 | 0.310 | 0.377 |
| 2,3-Dimethylbutane | 53 | 0 | 0.190 | 0.270 | 0.410 | 0.660 | 1.040 | 3.170 | 0.180 | 0.594 | 0.573 |
| 2,3-Dimethylpentane | 53 | 0 | 0.150 | 0.210 | 0.300 | 0.440 | 0.620 | 3.720 | 0.100 | 0.421 | 0.518 |
| 2,4-Dimethylhexane | 53 | 0 | 0.080 | 0.110 | 0.130 | 0.190 | 0.260 | 1.460 | 0.070 | 0.188 | 0.206 |
| 2,4-Dimethylpentane | 53 | 0 | 0.090 | 0.120 | 0.160 | 0.230 | 0.360 | 1.830 | 0.070 | 0.229 | 0.262 |
| 2,5-Dimethylhexane | 53 | 1 | 0.060 | 0.080 | 0.090 | 0.130 | 0.200 | 1.000 | 0.050 | 0.135 | 0.146 |
| 2-Ethyl-1-butene | 53 | 37 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.220 | 0.050 | 0.062 | 0.035 |
| 2-Ethyltoluene | 53 | 0 | 0.110 | 0.170 | 0.230 | 0.310 | 0.480 | 1.460 | 0.080 | 0.291 | 0.225 |
| 2-methyl-1-butene | 53 | 0 | 0.110 | 0.160 | 0.200 | 0.330 | 0.580 | 2.830 | 0.090 | 0.322 | 0.393 |
| 2-Methyl-2-butene | 53 | 0 | 0.180 | 0.250 | 0.350 | 0.540 | 1.010 | 2.160 | 0.160 | 0.494 | 0.402 |
| 2-Methylheptane | 53 | 0 | 0.110 | 0.160 | 0.210 | 0.310 | 0.490 | 2.370 | 0.090 | 0.306 | 0.349 |
| 2-Methylhexane | 53 | 0 | 0.250 | 0.360 | 0.500 | 0.770 | 1.170 | 5.160 | 0.180 | 0.712 | 0.782 |
| 2-Methylpentane | 53 | 0 | 0.730 | 0.960 | 1.650 | 3.130 | 4.600 | 13.980 | 0.680 | 2.489 | 2.467 |
| 3,6-Dimethyloctane | 53 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.320 | 0.050 | 0.065 | 0.044 |
| 3-Ethyltoluene | 53 | 0 | 0.270 | 0.400 | 0.540 | 0.790 | 1.150 | 3.760 | 0.190 | 0.717 | 0.608 |
| 3-Methyl-1-pentene | 53 | 28 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.170 | 0.050 | 0.059 | 0.021 |
| 3-Methylheptane | 53 | 1 | 0.090 | 0.150 | 0.180 | 0.260 | 0.460 | 1.930 | 0.050 | 0.267 | 0.292 |
| 3-Methylhexane | 53 | 0 | 0.280 | 0.390 | 0.580 | 0.860 | 1.400 | 6.130 | 0.210 | 0.838 | 0.950 |
| 3-Methylpentane | 53 | 0 | 0.480 | 0.650 | 1.370 | 4.240 | 6.960 | 17.580 | 0.450 | 2.772 | 3.099 |
| 4-Ethyltoluene | 53 | 0 | 0.160 | 0.230 | 0.290 | 0.410 | 0.600 | 1.880 | 0.120 | 0.384 | 0.296 |
| 4-Methyl-1-pentene | 53 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.150 | 0.050 | 0.057 | 0.019 |
| 4-Methylheptane | 53 | 3 | 0.050 | 0.070 | 0.090 | 0.120 | 0.190 | 0.890 | 0.050 | 0.122 | 0.131 |
| Acetylene | 53 | 0 | 0.978 | 1.318 | 2.118 | 2.991 | 4.103 | 9.406 | 0.855 | 2.517 | 1.625 |
| Benzene | 53 | 0 | 0.660 | 0.950 | 1.560 | 2.910 | 4.810 | 14.900 | 0.560 | 2.455 | 2.527 |
| Bromodichloromethane | 53 | 0 | 0.060 | 0.080 | 0.080 | 0.100 | 0.120 | 0.200 | 0.060 | 0.093 | 0.029 |

## Table 43: VOC Annual Statistics at Hamilton (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Bromoform | 53 | 3 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.100 | 0.050 | 0.058 | 0.010 |
| Bromomethane | 53 | 0 | 0.140 | 0.150 | 0.160 | 0.180 | 0.230 | 0.410 | 0.110 | 0.176 | 0.049 |
| Butane | 53 | 0 | 1.260 | 2.580 | 4.230 | 7.950 | 15.740 | 30.140 | 1.190 | 6.537 | 6.594 |
| Carbontetrachloride | 53 | 0 | 0.630 | 0.680 | 0.690 | 0.760 | 0.800 | 1.110 | 0.310 | 0.717 | 0.099 |
| Chlorobenzene | 53 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Chloroethane | 53 | 0 | 0.060 | 0.080 | 0.080 | 0.100 | 0.110 | 0.130 | 0.060 | 0.086 | 0.017 |
| Chloroform | 53 | 0 | 0.100 | 0.120 | 0.130 | 0.150 | 0.180 | 0.290 | 0.090 | 0.136 | 0.034 |
| Chloromethane | 53 | 0 | 0.990 | 1.100 | 1.200 | 1.260 | 1.340 | 1.550 | 0.970 | 1.201 | 0.126 |
| cis-1,2-Dichloroethylene | 53 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 53 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.170 | 0.050 | 0.057 | 0.021 |
| cis-1,3-Dichloropropene | 53 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 3.940 | 0.050 | 0.128 | 0.535 |
| cis-1,3-Dimethylcyclohexane | 53 | 5 | 0.050 | 0.060 | 0.080 | 0.130 | 0.190 | 0.620 | 0.050 | 0.120 | 0.111 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 53 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.230 | 0.050 | 0.061 | 0.035 |
| cis-2-Butene | 53 | 0 | 0.090 | 0.120 | 0.190 | 0.270 | 0.450 | 1.120 | 0.080 | 0.240 | 0.205 |
| cis-2-Heptene | 53 | 0 | 0.060 | 0.070 | 0.080 | 0.090 | 0.110 | 0.140 | 0.050 | 0.084 | 0.019 |
| cis-2-Hexene | 53 | 19 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.270 | 0.050 | 0.069 | 0.043 |
| cis-2-Pentene | 53 | 1 | 0.090 | 0.130 | 0.150 | 0.220 | 0.410 | 0.900 | 0.050 | 0.213 | 0.156 |
| cis-3-Methyl-2-pentene | 53 | 11 | 0.050 | 0.050 | 0.060 | 0.080 | 0.140 | 0.340 | 0.050 | 0.078 | 0.056 |
| cis-4-Methyl-2-pentene | 53 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| Cyclohexane | 53 | 0 | 0.110 | 0.160 | 0.250 | 0.360 | 0.540 | 2.090 | 0.090 | 0.338 | 0.370 |
| Cyclohexene | 53 | 29 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.050 | 0.054 | 0.009 |
| Cyclopentane | 53 | 0 | 0.150 | 0.200 | 0.300 | 0.440 | 0.660 | 2.400 | 0.110 | 0.406 | 0.396 |
| Cyclopentene | 53 | 13 | 0.050 | 0.050 | 0.060 | 0.070 | 0.120 | 0.230 | 0.050 | 0.071 | 0.037 |
| Decane | 53 | 0 | 0.170 | 0.290 | 0.390 | 0.530 | 0.890 | 7.700 | 0.110 | 0.625 | 1.043 |
| Dibromochloromethane | 53 | 1 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.059 | 0.009 |
| Dibromomethane | 53 | 1 | 0.080 | 0.090 | 0.100 | 0.100 | 0.110 | 0.130 | 0.050 | 0.097 | 0.013 |
| Dichloromethane | 53 | 0 | 0.260 | 0.380 | 0.530 | 0.860 | 1.060 | 5.780 | 0.250 | 0.727 | 0.802 |
| Dodecane | 53 | 0 | 0.090 | 0.150 | 0.200 | 0.240 | 0.350 | 1.130 | 0.080 | 0.229 | 0.171 |
| EDB | 53 | 4 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.058 | 0.009 |
| Ethane | 53 | 0 | 1.795 | 2.598 | 3.702 | 4.972 | 6.058 | 11.982 | 1.434 | 4.148 | 2.267 |
| Ethylbenzene | 53 | 0 | 0.390 | 0.570 | 0.880 | 1.440 | 2.160 | 7.590 | 0.270 | 1.252 | 1.174 |

## Table 43: VOC Annual Statistics at Hamilton (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbromide | 53 | 53 | | | | | | | | | |
| Ethylene | 53 | 0 | 1.070 | 1.657 | 2.161 | 3.285 | 4.803 | 10.159 | 0.966 | 2.736 | 1.744 |
| Freon11 | 53 | 0 | 1.670 | 1.780 | 1.870 | 2.010 | 2.100 | 3.910 | 1.500 | 1.971 | 0.411 |
| Freon114 | 53 | 0 | 0.200 | 0.220 | 0.230 | 0.250 | 0.270 | 0.290 | 0.190 | 0.235 | 0.023 |
| Freon12 | 53 | 0 | 2.590 | 2.780 | 2.910 | 3.040 | 3.290 | 6.440 | 2.300 | 3.013 | 0.584 |
| Freon22 | 53 | 0 | 0.650 | 0.930 | 1.170 | 1.630 | 2.010 | 4.040 | 0.530 | 1.360 | 0.688 |
| Heptane | 53 | 0 | 0.260 | 0.350 | 0.510 | 0.740 | 1.030 | 5.490 | 0.210 | 0.719 | 0.825 |
| Hexachlorobutadiene | 53 | 53 | | | | | | | | | |
| Hexane | 53 | 0 | 0.570 | 0.760 | 2.200 | 8.930 | 12.670 | 32.390 | 0.480 | 4.989 | 6.113 |
| Hexylbenzene | 41 | 15 | 0.050 | 0.050 | 0.050 | 0.120 | 0.730 | 0.860 | 0.050 | 0.156 | 0.233 |
| Indane | 53 | 0 | 0.060 | 0.100 | 0.120 | 0.200 | 0.250 | 0.610 | 0.060 | 0.159 | 0.105 |
| Isobutane | 53 | 0 | 0.650 | 1.200 | 1.800 | 3.690 | 7.170 | 16.400 | 0.620 | 2.981 | 3.094 |
| iso-Butylbenzene | 53 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.140 | 0.050 | 0.054 | 0.013 |
| Isopentane | 53 | 0 | 1.920 | 2.380 | 4.060 | 6.180 | 10.970 | 20.900 | 1.740 | 5.437 | 4.369 |
| Isoprene | 53 | 0 | 0.080 | 0.130 | 0.150 | 0.250 | 0.370 | 0.660 | 0.060 | 0.204 | 0.121 |
| iso-Propylbenzene | 53 | 1 | 0.050 | 0.070 | 0.090 | 0.120 | 0.150 | 0.380 | 0.050 | 0.099 | 0.056 |
| m and p-Xylene | 53 | 0 | 0.940 | 1.590 | 2.420 | 4.370 | 6.520 | 22.530 | 0.680 | 3.663 | 3.609 |
| Methylcyclohexane | 53 | 0 | 0.120 | 0.180 | 0.250 | 0.390 | 0.670 | 2.860 | 0.100 | 0.382 | 0.445 |
| Methylcyclopentane | 53 | 0 | 0.290 | 0.410 | 0.690 | 1.590 | 2.900 | 5.630 | 0.290 | 1.194 | 1.200 |
| n-Butylbenzene | 53 | 6 | 0.050 | 0.050 | 0.060 | 0.090 | 0.110 | 0.250 | 0.050 | 0.076 | 0.037 |
| Nonane | 53 | 0 | 0.130 | 0.200 | 0.270 | 0.350 | 0.660 | 2.410 | 0.100 | 0.395 | 0.404 |
| n-Propylbenzene | 53 | 0 | 0.110 | 0.160 | 0.200 | 0.280 | 0.420 | 1.320 | 0.080 | 0.261 | 0.205 |
| Octane | 53 | 0 | 0.120 | 0.180 | 0.250 | 0.370 | 0.540 | 2.360 | 0.100 | 0.349 | 0.366 |
| o-Xylene | 53 | 0 | 0.340 | 0.510 | 0.750 | 1.320 | 1.820 | 5.990 | 0.240 | 1.055 | 0.937 |
| p-Cymene | 53 | 2 | 0.050 | 0.070 | 0.110 | 0.150 | 0.190 | 0.520 | 0.050 | 0.122 | 0.078 |
| Pentane | 53 | 0 | 1.120 | 1.490 | 2.280 | 3.350 | 5.430 | 13.610 | 0.990 | 3.033 | 2.456 |
| Propane | 53 | 0 | 1.430 | 2.250 | 3.090 | 4.280 | 6.210 | 14.620 | 1.220 | 3.642 | 2.347 |
| Propylene | 53 | 0 | 0.430 | 0.560 | 0.690 | 1.110 | 1.480 | 3.690 | 0.350 | 0.921 | 0.634 |
| sec-Butylbenzene | 53 | 29 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.210 | 0.050 | 0.067 | 0.038 |
| Styrene | 53 | 0 | 0.080 | 0.140 | 0.200 | 0.280 | 0.450 | 1.370 | 0.060 | 0.251 | 0.204 |
| tert-Butylbenzene | 53 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |

## Table 43: VOC Annual Statistics at Hamilton (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethylene | 53 | 0 | 0.200 | 0.330 | 0.520 | 1.080 | 2.200 | 5.040 | 0.130 | 0.971 | 1.010 |
| Toluene | 53 | 0 | 1.620 | 2.860 | 4.330 | 6.970 | 10.610 | 44.940 | 1.400 | 6.048 | 6.518 |
| trans-1,2-Dichloroethylene | 53 | 53 | | | | | | | | | |
| trans-1,2-Dimethylcyclohexane | 53 | 16 | 0.050 | 0.050 | 0.060 | 0.090 | 0.140 | 0.430 | 0.050 | 0.092 | 0.080 |
| trans-1,3-Dichloropropene | 53 | 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 3.330 | 0.050 | 0.116 | 0.451 |
| trans-1,4-Dimethylcyclohexane | 53 | 32 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.230 | 0.050 | 0.064 | 0.039 |
| trans-2-Butene | 53 | 0 | 0.100 | 0.140 | 0.200 | 0.290 | 0.520 | 1.290 | 0.080 | 0.262 | 0.237 |
| trans-2-Heptene | 53 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.050 | 0.053 | 0.012 |
| trans-2-Hexene | 53 | 16 | 0.050 | 0.050 | 0.060 | 0.070 | 0.140 | 0.330 | 0.050 | 0.077 | 0.054 |
| trans-2-Pentene | 53 | 0 | 0.100 | 0.140 | 0.220 | 0.290 | 0.600 | 1.330 | 0.080 | 0.281 | 0.237 |
| trans-3-Heptene | 53 | 53 | | | | | | | | | |
| trans-3-Methyl-2-pentene | 53 | 24 | 0.050 | 0.050 | 0.050 | 0.060 | 0.120 | 0.290 | 0.050 | 0.070 | 0.048 |
| trans-4-Methyl-2-pentene | 53 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.130 | 0.050 | 0.052 | 0.011 |
| Trichloroethylene | 53 | 0 | 0.110 | 0.170 | 0.240 | 0.300 | 0.530 | 1.240 | 0.100 | 0.289 | 0.223 |
| Undecane | 53 | 0 | 0.140 | 0.240 | 0.330 | 0.480 | 0.800 | 5.300 | 0.090 | 0.499 | 0.726 |
| Vinylchloride | 53 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.110 | 0.050 | 0.052 | 0.009 |

*Notes:*

- *VOC sites are operated by Environment Canada*

## Table 44: VOC Annual Statistics at Kingston (2000)

Unit: micrograms per cubic metre (µg/m³)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | | 0 | 0.290 | 0.330 | 0.380 | 0.420 | 0.500 | 0.980 | 0.260 | 0.394 | 0.108 |
| 1,1,2,2-Tetrachloroethane | 50 | 10 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.090 | 0.050 | 0.058 | 0.011 |
| 1,1,2-Trichloroethane | 50 | 30 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.051 | 0.005 |
| 1,1-Dichloroethane | 50 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,1-Dichloroethylene | 50 | 5 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.050 | 0.064 | 0.011 |
| 1,2,3-Trimethylbenzene | 50 | 1 | 0.100 | 0.170 | 0.260 | 0.370 | 0.570 | 2.990 | 0.050 | 0.368 | 0.478 |
| 1,2,4-Trichlorobenzene | 50 | 50 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 50 | 0 | 0.360 | 0.610 | 1.010 | 1.430 | 2.180 | 11.940 | 0.100 | 1.434 | 1.943 |
| 1,2-Dichlorobenzene | 50 | 50 | | | | | | | | | |
| 1,2-Dichloroethane | 50 | 0 | 0.060 | 0.070 | 0.080 | 0.090 | 0.100 | 0.140 | 0.060 | 0.083 | 0.014 |
| 1,2-Dichloropropane | 50 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| 1,2-Diethylbenzene | 50 | 30 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.220 | 0.050 | 0.057 | 0.027 |
| 1,3,5-Trimethylbenzene | 50 | 1 | 0.100 | 0.170 | 0.330 | 0.430 | 0.670 | 3.580 | 0.050 | 0.435 | 0.582 |
| 1,3-Butadiene | 50 | 1 | 0.050 | 0.080 | 0.100 | 0.140 | 0.250 | 0.700 | 0.050 | 0.137 | 0.112 |
| 1,3-Dichlorobenzene | 50 | 50 | | | | | | | | | |
| 1,3-Diethylbenzene | 50 | 8 | 0.050 | 0.050 | 0.080 | 0.100 | 0.160 | 0.840 | 0.050 | 0.108 | 0.127 |
| 1,4-Dichlorobenzene | 50 | 0 | 0.070 | 0.100 | 0.130 | 0.160 | 0.230 | 0.460 | 0.060 | 0.147 | 0.071 |
| 1,4-Dichlorobutane | 50 | 50 | | | | | | | | | |
| 1,4-Diethylbenzene | 50 | 1 | 0.090 | 0.140 | 0.250 | 0.340 | 0.520 | 3.060 | 0.050 | 0.340 | 0.474 |
| 1-Butene/Isobutene | 50 | 0 | 0.410 | 0.470 | 0.660 | 0.820 | 1.250 | 2.980 | 0.380 | 0.778 | 0.493 |
| 1-Butyne | 50 | 50 | | | | | | | | | |
| 1-Decene | 50 | 16 | 0.050 | 0.050 | 0.070 | 0.110 | 0.230 | 0.400 | 0.050 | 0.103 | 0.077 |
| 1-Heptene | 50 | 1 | 0.070 | 0.110 | 0.150 | 0.210 | 0.320 | 2.490 | 0.050 | 0.223 | 0.348 |
| 1-Hexene | 50 | 0 | 0.130 | 0.190 | 0.250 | 0.310 | 0.410 | 1.990 | 0.090 | 0.296 | 0.265 |
| 1-Methylcyclohexene | 50 | 9 | 0.050 | 0.050 | 0.060 | 0.090 | 0.100 | 0.380 | 0.050 | 0.076 | 0.050 |
| 1-Methylcyclopentene | 50 | 2 | 0.050 | 0.070 | 0.120 | 0.180 | 0.250 | 1.820 | 0.050 | 0.174 | 0.257 |
| 1-Nonene | 50 | 22 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.210 | 0.050 | 0.062 | 0.027 |
| 1-Octene | 50 | 27 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.110 | 0.050 | 0.055 | 0.011 |
| 1-Pentene | 50 | 0 | 0.110 | 0.150 | 0.210 | 0.290 | 0.410 | 2.220 | 0.080 | 0.281 | 0.311 |
| 1-Propyne | 50 | 21 | 0.050 | 0.050 | 0.050 | 0.080 | 0.110 | 0.360 | 0.050 | 0.075 | 0.052 |
| 2,2,3-Trimethylbutane | 50 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.240 | 0.050 | 0.054 | 0.027 |

## Table 44: VOC Annual Statistics at Kingston (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 2,2,4-Trimethylpentane | 50 | 0 | 0.170 | 0.310 | 0.420 | 0.650 | 1.050 | 11.710 | 0.100 | 0.797 | 1.654 |
| 2,2,5-Trimethylhexane | 50 | 30 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.730 | 0.050 | 0.078 | 0.105 |
| 2,2-Dimethylbutane | 50 | 0 | 0.130 | 0.180 | 0.220 | 0.290 | 0.360 | 3.050 | 0.110 | 0.298 | 0.413 |
| 2,2-Dimethylhexane | 50 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.320 | 0.050 | 0.057 | 0.039 |
| 2,2-Dimethylpentane | 50 | 16 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.820 | 0.050 | 0.079 | 0.110 |
| 2,2-Dimethylpropane | 50 | 19 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.150 | 0.050 | 0.058 | 0.017 |
| 2,3,4-Trimethylpentane | 50 | 1 | 0.070 | 0.140 | 0.180 | 0.270 | 0.440 | 4.680 | 0.050 | 0.341 | 0.677 |
| 2,3-Dimethylbutane | 50 | 0 | 0.160 | 0.290 | 0.380 | 0.480 | 0.880 | 8.170 | 0.130 | 0.598 | 1.134 |
| 2,3-Dimethylpentane | 50 | 0 | 0.110 | 0.160 | 0.220 | 0.320 | 0.440 | 4.270 | 0.090 | 0.352 | 0.595 |
| 2,4-Dimethylhexane | 50 | 1 | 0.060 | 0.090 | 0.120 | 0.170 | 0.260 | 2.290 | 0.050 | 0.193 | 0.324 |
| 2,4-Dimethylpentane | 50 | 0 | 0.060 | 0.110 | 0.140 | 0.220 | 0.320 | 3.370 | 0.060 | 0.243 | 0.469 |
| 2,5-Dimethylhexane | 50 | 2 | 0.050 | 0.080 | 0.100 | 0.140 | 0.210 | 1.960 | 0.050 | 0.163 | 0.279 |
| 2-Ethyl-1-butene | 50 | 17 | 0.050 | 0.050 | 0.060 | 0.100 | 0.160 | 1.360 | 0.050 | 0.110 | 0.190 |
| 2-Ethyltoluene | 50 | 0 | 0.090 | 0.150 | 0.250 | 0.350 | 0.520 | 2.590 | 0.050 | 0.336 | 0.430 |
| 2-methyl-1-butene | 50 | 0 | 0.130 | 0.210 | 0.370 | 0.550 | 1.300 | 5.700 | 0.120 | 0.553 | 0.818 |
| 2-Methyl-2-butene | 50 | 0 | 0.180 | 0.330 | 0.520 | 0.990 | 1.420 | 9.340 | 0.140 | 0.893 | 1.357 |
| 2-Methylheptane | 50 | 0 | 0.110 | 0.160 | 0.220 | 0.400 | 0.510 | 3.070 | 0.070 | 0.353 | 0.449 |
| 2-Methylhexane | 50 | 0 | 0.200 | 0.310 | 0.510 | 0.740 | 1.180 | 8.990 | 0.170 | 0.749 | 1.254 |
| 2-Methylpentane | 50 | 0 | 0.620 | 1.070 | 1.450 | 1.960 | 3.090 | 24.850 | 0.490 | 2.092 | 3.419 |
| 3,6-Dimethyloctane | 50 | 13 | 0.050 | 0.050 | 0.070 | 0.110 | 0.160 | 0.320 | 0.050 | 0.091 | 0.059 |
| 3-Ethyltoluene | 50 | 0 | 0.220 | 0.350 | 0.640 | 0.880 | 1.290 | 6.520 | 0.080 | 0.850 | 1.116 |
| 3-Methyl-1-pentene | 50 | 21 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.590 | 0.050 | 0.072 | 0.078 |
| 3-Methylheptane | 50 | 0 | 0.100 | 0.150 | 0.230 | 0.380 | 0.530 | 3.590 | 0.060 | 0.360 | 0.529 |
| 3-Methylhexane | 50 | 0 | 0.250 | 0.370 | 0.560 | 0.790 | 1.230 | 9.840 | 0.160 | 0.827 | 1.376 |
| 3-Methylpentane | 50 | 0 | 0.420 | 0.660 | 0.890 | 1.270 | 1.650 | 15.550 | 0.390 | 1.311 | 2.136 |
| 4-Ethyltoluene | 50 | 0 | 0.140 | 0.220 | 0.360 | 0.500 | 0.700 | 2.960 | 0.060 | 0.456 | 0.508 |
| 4-Methyl-1-pentene | 50 | 23 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.450 | 0.050 | 0.068 | 0.058 |
| 4-Methylheptane | 50 | 3 | 0.050 | 0.060 | 0.100 | 0.150 | 0.210 | 1.340 | 0.050 | 0.146 | 0.196 |
| Acetylene | 50 | 0 | 0.685 | 0.909 | 1.369 | 2.096 | 3.001 | 6.370 | 0.555 | 1.708 | 1.173 |
| Benzene | 50 | 0 | 0.520 | 0.840 | 1.120 | 1.400 | 2.230 | 5.510 | 0.510 | 1.299 | 0.856 |
| Bromodichloromethane | 50 | 2 | 0.060 | 0.090 | 0.120 | 0.140 | 0.160 | 0.220 | 0.050 | 0.118 | 0.039 |

## Table 44: VOC Annual Statistics at Kingston (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| | # of | | | P E R | C E N T | I L E S | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Bromoform | 50 | 10 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.090 | 0.050 | 0.058 | 0.009 |
| Bromomethane | 50 | 0 | 0.080 | 0.130 | 0.140 | 0.160 | 0.170 | 0.190 | 0.070 | 0.141 | 0.026 |
| Butane | 50 | 0 | 1.520 | 2.540 | 3.730 | 5.240 | 8.590 | 20.030 | 1.300 | 4.546 | 3.411 |
| Carbontetrachloride | 50 | 0 | 0.620 | 0.680 | 0.700 | 0.780 | 0.800 | 0.830 | 0.530 | 0.714 | 0.064 |
| Chlorobenzene | 50 | 17 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.150 | 0.050 | 0.054 | 0.015 |
| Chloroethane | 50 | 1 | 0.050 | 0.060 | 0.070 | 0.080 | 0.100 | 0.120 | 0.050 | 0.074 | 0.018 |
| Chloroform | 50 | 0 | 0.090 | 0.120 | 0.140 | 0.180 | 0.230 | 0.250 | 0.090 | 0.151 | 0.043 |
| Chloromethane | 50 | 0 | 0.950 | 1.020 | 1.130 | 1.210 | 1.320 | 1.450 | 0.870 | 1.128 | 0.127 |
| cis-1,2-Dichloroethylene | 50 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| cis-1,2-Dimethylcyclohexane | 50 | 19 | 0.050 | 0.050 | 0.050 | 0.080 | 0.090 | 0.200 | 0.050 | 0.067 | 0.030 |
| cis-1,3-Dichloropropene | 50 | 50 | | | | | | | | | |
| cis-1,3-Dimethylcyclohexane | 50 | 4 | 0.050 | 0.060 | 0.090 | 0.180 | 0.210 | 0.630 | 0.050 | 0.131 | 0.103 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 50 | 20 | 0.050 | 0.050 | 0.050 | 0.100 | 0.120 | 0.370 | 0.050 | 0.080 | 0.055 |
| cis-2-Butene | 50 | 0 | 0.100 | 0.190 | 0.270 | 0.360 | 0.510 | 1.930 | 0.080 | 0.335 | 0.308 |
| cis-2-Heptene | 50 | 11 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.480 | 0.050 | 0.077 | 0.063 |
| cis-2-Hexene | 50 | 10 | 0.050 | 0.060 | 0.080 | 0.130 | 0.210 | 1.580 | 0.050 | 0.136 | 0.222 |
| cis-2-Octene | 4 | 4 | | | | | | | | | |
| cis-2-Pentene | 50 | 0 | 0.110 | 0.160 | 0.260 | 0.400 | 0.590 | 3.530 | 0.090 | 0.382 | 0.510 |
| cis-3-Methyl-2-pentene | 50 | 5 | 0.050 | 0.060 | 0.100 | 0.150 | 0.240 | 1.940 | 0.050 | 0.157 | 0.272 |
| cis-4-Methyl-2-pentene | 50 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.160 | 0.050 | 0.057 | 0.024 |
| Cyclohexane | 50 | 0 | 0.110 | 0.190 | 0.250 | 0.330 | 0.470 | 3.760 | 0.100 | 0.340 | 0.514 |
| Cyclohexene | 50 | 19 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.330 | 0.050 | 0.064 | 0.041 |
| Cyclopentane | 50 | 0 | 0.140 | 0.240 | 0.330 | 0.480 | 0.700 | 5.390 | 0.120 | 0.495 | 0.752 |
| Cyclopentene | 50 | 4 | 0.050 | 0.060 | 0.080 | 0.120 | 0.180 | 0.610 | 0.050 | 0.106 | 0.091 |
| Decane | 50 | 0 | 0.210 | 0.390 | 0.590 | 1.110 | 2.050 | 2.370 | 0.130 | 0.867 | 0.633 |
| Dibromochloromethane | 50 | 6 | 0.050 | 0.050 | 0.070 | 0.070 | 0.080 | 0.100 | 0.050 | 0.065 | 0.013 |
| Dibromomethane | 50 | 3 | 0.050 | 0.090 | 0.100 | 0.110 | 0.120 | 0.140 | 0.050 | 0.100 | 0.020 |
| Dichloromethane | 50 | 0 | 0.440 | 1.860 | 3.200 | 6.270 | 13.710 | 56.100 | 0.290 | 6.080 | 9.153 |
| Dodecane | 50 | 1 | 0.120 | 0.210 | 0.330 | 0.460 | 0.730 | 3.480 | 0.050 | 0.445 | 0.505 |
| EDB | 50 | 10 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.090 | 0.050 | 0.060 | 0.010 |
| Ethane | 50 | 0 | 1.200 | 1.784 | 2.639 | 4.264 | 6.192 | 8.230 | 1.110 | 3.148 | 1.732 |

## Table 44: VOC Annual Statistics at Kingston (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| | # of | | P E R C E N T I L E S | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Ethylbenzene | 50 | 0 | 0.370 | 0.500 | 0.750 | 1.210 | 1.930 | 6.670 | 0.190 | 1.105 | 1.180 |
| Ethylbromide | 50 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 50 | 0 | 0.553 | 0.681 | 1.151 | 1.619 | 2.436 | 6.289 | 0.503 | 1.379 | 1.083 |
| Freon11 | 50 | 0 | 1.610 | 1.750 | 1.840 | 2.030 | 2.230 | 2.380 | 1.560 | 1.902 | 0.205 |
| Freon114 | 50 | 0 | 0.160 | 0.210 | 0.230 | 0.250 | 0.280 | 0.320 | 0.150 | 0.230 | 0.037 |
| Freon12 | 50 | 0 | 2.410 | 2.710 | 2.890 | 3.140 | 3.440 | 3.710 | 2.280 | 2.937 | 0.335 |
| Freon22 | 49 | 0 | 0.620 | 0.690 | 0.920 | 1.970 | 3.040 | 19.550 | 0.550 | 1.761 | 2.800 |
| Heptane | 50 | 0 | 0.220 | 0.330 | 0.450 | 0.630 | 0.880 | 5.690 | 0.200 | 0.623 | 0.791 |
| Hexachlorobutadiene | 50 | 50 | | | | | | | | | |
| Hexane | 50 | 0 | 0.690 | 1.330 | 2.220 | 3.250 | 6.010 | 15.370 | 0.510 | 2.935 | 2.692 |
| Hexylbenzene | 41 | 21 | 0.050 | 0.050 | 0.050 | 0.120 | 0.160 | 0.820 | 0.050 | 0.114 | 0.162 |
| Indane | 50 | 1 | 0.060 | 0.100 | 0.160 | 0.230 | 0.350 | 1.640 | 0.050 | 0.220 | 0.266 |
| Isobutane | 50 | 0 | 0.610 | 0.920 | 1.480 | 2.150 | 2.600 | 8.120 | 0.470 | 1.741 | 1.278 |
| iso-Butylbenzene | 50 | 26 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.290 | 0.050 | 0.062 | 0.039 |
| Isopentane | 50 | 0 | 1.760 | 2.740 | 3.870 | 5.470 | 6.490 | 48.360 | 1.360 | 5.066 | 6.707 |
| Isoprene | 50 | 2 | 0.060 | 0.080 | 0.150 | 0.260 | 0.650 | 1.010 | 0.050 | 0.229 | 0.222 |
| iso-Propylbenzene | 50 | 4 | 0.050 | 0.060 | 0.080 | 0.120 | 0.170 | 0.620 | 0.050 | 0.107 | 0.104 |
| m and p-Xylene | 50 | 0 | 1.030 | 1.370 | 2.350 | 3.790 | 5.660 | 20.220 | 0.410 | 3.316 | 3.649 |
| Methylcyclohexane | 50 | 0 | 0.100 | 0.170 | 0.220 | 0.370 | 0.480 | 3.440 | 0.100 | 0.345 | 0.482 |
| Methylcyclopentane | 50 | 0 | 0.320 | 0.520 | 0.840 | 1.130 | 2.000 | 13.270 | 0.260 | 1.195 | 1.833 |
| n-Butylbenzene | 50 | 6 | 0.050 | 0.060 | 0.090 | 0.130 | 0.190 | 0.900 | 0.050 | 0.123 | 0.137 |
| Nonane | 50 | 0 | 0.160 | 0.260 | 0.480 | 0.730 | 1.210 | 1.620 | 0.090 | 0.557 | 0.396 |
| n-Propylbenzene | 50 | 0 | 0.100 | 0.150 | 0.250 | 0.350 | 0.530 | 2.370 | 0.060 | 0.335 | 0.404 |
| Octane | 50 | 0 | 0.130 | 0.180 | 0.270 | 0.420 | 0.520 | 2.230 | 0.100 | 0.363 | 0.347 |
| o-Xylene | 50 | 0 | 0.340 | 0.490 | 0.770 | 1.260 | 1.910 | 7.620 | 0.160 | 1.154 | 1.342 |
| p-Cymene | 50 | 2 | 0.060 | 0.090 | 0.160 | 0.240 | 0.290 | 0.770 | 0.050 | 0.175 | 0.120 |
| Pentane | 50 | 0 | 1.010 | 1.660 | 2.320 | 3.130 | 4.370 | 28.170 | 0.830 | 3.121 | 3.911 |
| Propane | 50 | 0 | 1.080 | 1.840 | 3.180 | 4.990 | 9.210 | 40.110 | 0.120 | 4.739 | 6.168 |
| Propylene | 50 | 0 | 0.190 | 0.290 | 0.400 | 0.580 | 0.930 | 2.880 | 0.150 | 0.533 | 0.461 |
| sec-Butylbenzene | 50 | 25 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.320 | 0.050 | 0.065 | 0.043 |
| Styrene | 50 | 1 | 0.110 | 0.170 | 0.260 | 0.360 | 0.520 | 0.930 | 0.050 | 0.296 | 0.188 |

# Table 44: VOC Annual Statistics at Kingston (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| tert-Butylbenzene | 50 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| Tetrachloroethylene | 50 | 0 | 0.290 | 0.390 | 0.570 | 0.800 | 1.020 | 1.750 | 0.230 | 0.638 | 0.294 |
| Toluene | 50 | 0 | 1.480 | 2.600 | 3.910 | 6.030 | 10.700 | 33.580 | 0.960 | 5.455 | 5.634 |
| trans-1,2-Dichloroethylene | 50 | 50 | | | | | | | | | |
| trans-1,2-Dimethylcyclohexane | 50 | 17 | 0.050 | 0.050 | 0.060 | 0.120 | 0.160 | 0.390 | 0.050 | 0.093 | 0.065 |
| trans-1,3-Dichloropropene | 50 | 50 | | | | | | | | | |
| trans-1,4-Dimethylcyclohexane | 50 | 21 | 0.050 | 0.050 | 0.050 | 0.090 | 0.110 | 0.340 | 0.050 | 0.075 | 0.049 |
| trans-2-Butene | 50 | 0 | 0.120 | 0.220 | 0.310 | 0.460 | 0.620 | 2.010 | 0.080 | 0.393 | 0.343 |
| trans-2-Heptene | 50 | 18 | 0.050 | 0.050 | 0.050 | 0.080 | 0.100 | 0.620 | 0.050 | 0.079 | 0.084 |
| trans-2-Hexene | 50 | 5 | 0.050 | 0.060 | 0.100 | 0.160 | 0.240 | 1.890 | 0.050 | 0.160 | 0.267 |
| trans-2-Pentene | 50 | 0 | 0.100 | 0.220 | 0.360 | 0.630 | 0.900 | 5.490 | 0.090 | 0.562 | 0.801 |
| trans-3-Heptene | 50 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.320 | 0.050 | 0.057 | 0.039 |
| trans-3-Methyl-2-pentene | 50 | 10 | 0.050 | 0.050 | 0.090 | 0.130 | 0.190 | 1.740 | 0.050 | 0.137 | 0.243 |
| trans-4-Methyl-2-pentene | 50 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Trichloroethylene | 50 | 2 | 0.050 | 0.070 | 0.080 | 0.100 | 0.120 | 0.180 | 0.050 | 0.087 | 0.025 |
| Undecane | 50 | 0 | 0.200 | 0.340 | 0.550 | 1.020 | 1.650 | 2.610 | 0.100 | 0.772 | 0.576 |
| Vinylchloride | 50 | 50 | | | | | | | | | |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 45: VOC Annual Statistics at Kitchener (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane |  | 0 | 0.270 | 0.310 | 0.360 | 0.410 | 0.440 | 2.200 | 0.260 | 0.422 | 0.353 |
| 1,1,2,2-Tetrachloroethane | 28 | 7 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.070 | 0.050 | 0.057 | 0.007 |
| 1,1,2-Trichloroethane | 28 | 13 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.006 |
| 1,1-Dichloroethane | 28 | 21 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,1-Dichloroethylene | 28 | 2 | 0.050 | 0.060 | 0.070 | 0.080 | 0.080 | 0.090 | 0.050 | 0.069 | 0.010 |
| 1,2,3-Trimethylbenzene | 28 | 0 | 0.090 | 0.120 | 0.210 | 0.310 | 0.660 | 1.110 | 0.070 | 0.263 | 0.228 |
| 1,2,4-Trichlorobenzene | 28 | 28 |  |  |  |  |  |  |  |  |  |
| 1,2,4-Trimethylbenzene | 28 | 0 | 0.390 | 0.460 | 0.830 | 1.170 | 2.730 | 3.980 | 0.270 | 1.078 | 0.918 |
| 1,2-Dichlorobenzene | 28 | 28 |  |  |  |  |  |  |  |  |  |
| 1,2-Dichloroethane | 28 | 0 | 0.070 | 0.080 | 0.090 | 0.100 | 0.110 | 0.110 | 0.070 | 0.088 | 0.012 |
| 1,2-Dichloropropane | 28 | 13 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,2-Diethylbenzene | 28 | 22 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.052 | 0.008 |
| 1,3,5-Trimethylbenzene | 28 | 0 | 0.120 | 0.160 | 0.260 | 0.380 | 0.820 | 1.310 | 0.090 | 0.348 | 0.294 |
| 1,3-Butadiene | 28 | 0 | 0.080 | 0.110 | 0.170 | 0.240 | 0.440 | 0.980 | 0.070 | 0.230 | 0.208 |
| 1,3-Dichlorobenzene | 28 | 28 |  |  |  |  |  |  |  |  |  |
| 1,3-Diethylbenzene | 28 | 6 | 0.050 | 0.050 | 0.060 | 0.090 | 0.170 | 0.300 | 0.050 | 0.081 | 0.056 |
| 1,4-Dichlorobenzene | 28 | 0 | 0.060 | 0.120 | 0.180 | 0.310 | 0.530 | 0.670 | 0.050 | 0.228 | 0.161 |
| 1,4-Dichlorobutane | 28 | 28 |  |  |  |  |  |  |  |  |  |
| 1,4-Diethylbenzene | 28 | 0 | 0.080 | 0.130 | 0.160 | 0.250 | 0.570 | 0.820 | 0.060 | 0.221 | 0.174 |
| 1-Butene/Isobutene | 28 | 0 | 0.330 | 0.490 | 0.570 | 0.890 | 1.610 | 3.330 | 0.310 | 0.849 | 0.728 |
| 1-Butyne | 28 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1-Decene | 28 | 5 | 0.050 | 0.050 | 0.070 | 0.090 | 0.160 | 0.250 | 0.050 | 0.084 | 0.044 |
| 1-Heptene | 28 | 0 | 0.070 | 0.100 | 0.130 | 0.180 | 0.380 | 0.580 | 0.070 | 0.180 | 0.136 |
| 1-Hexene | 28 | 0 | 0.120 | 0.170 | 0.220 | 0.260 | 0.530 | 0.640 | 0.110 | 0.255 | 0.142 |
| 1-Methylcyclohexene | 28 | 7 | 0.050 | 0.050 | 0.050 | 0.070 | 0.120 | 0.130 | 0.050 | 0.062 | 0.023 |
| 1-Methylcyclopentene | 28 | 6 | 0.050 | 0.050 | 0.060 | 0.100 | 0.170 | 0.420 | 0.050 | 0.099 | 0.094 |
| 1-Nonene | 28 | 10 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.160 | 0.050 | 0.067 | 0.028 |
| 1-Octene | 28 | 11 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.180 | 0.050 | 0.064 | 0.029 |
| 1-Pentene | 28 | 0 | 0.090 | 0.110 | 0.140 | 0.190 | 0.480 | 0.700 | 0.080 | 0.193 | 0.151 |
| 1-Propyne | 28 | 1 | 0.050 | 0.070 | 0.100 | 0.140 | 0.240 | 0.460 | 0.050 | 0.130 | 0.101 |
| 2,2,3-Trimethylbutane | 28 | 26 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |

## Table 45: VOC Annual Statistics at Kitchener (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 2,2,4-Trimethylpentane | 28 | 0 | 0.230 | 0.400 | 0.530 | 0.820 | 2.240 | 2.810 | 0.220 | 0.764 | 0.691 |
| 2,2,5-Trimethylhexane | 28 | 18 | 0.050 | 0.050 | 0.050 | 0.060 | 0.140 | 0.160 | 0.050 | 0.064 | 0.033 |
| 2,2-Dimethylbutane | 28 | 0 | 0.130 | 0.170 | 0.190 | 0.270 | 0.540 | 0.770 | 0.120 | 0.259 | 0.167 |
| 2,2-Dimethylhexane | 28 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.100 | 0.050 | 0.055 | 0.014 |
| 2,2-Dimethylpentane | 28 | 6 | 0.050 | 0.050 | 0.060 | 0.080 | 0.120 | 0.240 | 0.050 | 0.076 | 0.046 |
| 2,2-Dimethylpropane | 28 | 6 | 0.050 | 0.050 | 0.060 | 0.070 | 0.130 | 0.150 | 0.050 | 0.069 | 0.028 |
| 2,3,4-Trimethylpentane | 28 | 0 | 0.090 | 0.150 | 0.180 | 0.290 | 0.800 | 1.010 | 0.090 | 0.279 | 0.253 |
| 2,3-Dimethylbutane | 28 | 0 | 0.180 | 0.260 | 0.330 | 0.440 | 1.160 | 2.060 | 0.170 | 0.489 | 0.467 |
| 2,3-Dimethylpentane | 28 | 0 | 0.140 | 0.190 | 0.240 | 0.380 | 1.070 | 1.130 | 0.140 | 0.354 | 0.287 |
| 2,4-Dimethylhexane | 28 | 0 | 0.060 | 0.100 | 0.120 | 0.180 | 0.520 | 0.600 | 0.060 | 0.172 | 0.143 |
| 2,4-Dimethylpentane | 28 | 0 | 0.080 | 0.100 | 0.140 | 0.200 | 0.440 | 0.750 | 0.070 | 0.201 | 0.169 |
| 2,5-Dimethylhexane | 28 | 3 | 0.050 | 0.060 | 0.090 | 0.120 | 0.350 | 0.430 | 0.050 | 0.123 | 0.103 |
| 2-Ethyl-1-butene | 28 | 21 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.230 | 0.050 | 0.066 | 0.045 |
| 2-Ethyltoluene | 28 | 0 | 0.110 | 0.130 | 0.220 | 0.320 | 0.630 | 1.050 | 0.090 | 0.276 | 0.225 |
| 2-methyl-1-butene | 28 | 0 | 0.090 | 0.130 | 0.180 | 0.270 | 0.810 | 1.170 | 0.080 | 0.280 | 0.288 |
| 2-Methyl-2-butene | 28 | 0 | 0.130 | 0.180 | 0.230 | 0.410 | 0.960 | 2.250 | 0.120 | 0.407 | 0.468 |
| 2-Methylheptane | 28 | 0 | 0.100 | 0.140 | 0.190 | 0.260 | 0.680 | 0.940 | 0.100 | 0.263 | 0.219 |
| 2-Methylhexane | 28 | 0 | 0.230 | 0.300 | 0.440 | 0.600 | 1.780 | 2.210 | 0.200 | 0.608 | 0.545 |
| 2-Methylpentane | 28 | 0 | 0.620 | 0.940 | 1.390 | 1.730 | 4.360 | 8.750 | 0.600 | 1.923 | 1.906 |
| 3,6-Dimethyloctane | 28 | 22 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.200 | 0.050 | 0.062 | 0.033 |
| 3-Ethyltoluene | 28 | 0 | 0.230 | 0.300 | 0.530 | 0.760 | 1.580 | 2.670 | 0.200 | 0.691 | 0.612 |
| 3-Methyl-1-pentene | 28 | 18 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.130 | 0.050 | 0.060 | 0.022 |
| 3-Methylheptane | 28 | 0 | 0.080 | 0.120 | 0.180 | 0.250 | 0.730 | 0.910 | 0.080 | 0.249 | 0.230 |
| 3-Methylhexane | 28 | 0 | 0.240 | 0.360 | 0.500 | 0.690 | 1.960 | 2.560 | 0.230 | 0.686 | 0.611 |
| 3-Methylpentane | 28 | 0 | 0.400 | 0.620 | 0.760 | 1.130 | 2.560 | 4.940 | 0.390 | 1.157 | 1.152 |
| 4-Ethyltoluene | 28 | 0 | 0.150 | 0.180 | 0.290 | 0.430 | 0.840 | 1.390 | 0.130 | 0.372 | 0.296 |
| 4-Methyl-1-pentene | 28 | 18 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.150 | 0.050 | 0.057 | 0.022 |
| 4-Methylheptane | 28 | 5 | 0.050 | 0.050 | 0.080 | 0.110 | 0.230 | 0.390 | 0.050 | 0.107 | 0.089 |
| Acetylene | 28 | 0 | 1.195 | 2.201 | 2.766 | 4.255 | 7.457 | 10.357 | 0.972 | 3.445 | 2.215 |
| Benzene | 28 | 0 | 0.660 | 1.040 | 1.340 | 1.650 | 2.890 | 4.890 | 0.550 | 1.581 | 1.053 |
| Bromodichloromethane | 28 | 0 | 0.060 | 0.070 | 0.080 | 0.110 | 0.140 | 0.180 | 0.050 | 0.092 | 0.033 |

## Table 45: VOC Annual Statistics at Kitchener (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 28 | 3 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.059 | 0.008 |
| Bromomethane | 28 | 0 | 0.120 | 0.140 | 0.150 | 0.160 | 0.190 | 0.200 | 0.120 | 0.153 | 0.020 |
| Butane | 28 | 0 | 1.370 | 3.470 | 4.690 | 6.070 | 22.250 | 27.150 | 1.290 | 6.538 | 6.743 |
| Carbontetrachloride | 28 | 0 | 0.590 | 0.670 | 0.750 | 0.800 | 0.900 | 1.060 | 0.510 | 0.753 | 0.114 |
| Chlorobenzene | 28 | 5 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| Chloroethane | 28 | 0 | 0.070 | 0.080 | 0.080 | 0.100 | 0.150 | 0.190 | 0.060 | 0.094 | 0.031 |
| Chloroform | 28 | 0 | 0.100 | 0.100 | 0.110 | 0.120 | 0.180 | 0.220 | 0.080 | 0.119 | 0.030 |
| Chloromethane | 28 | 0 | 1.060 | 1.150 | 1.270 | 1.330 | 1.420 | 1.460 | 1.060 | 1.253 | 0.117 |
| cis-1,2-Dichloroethylene | 28 | 25 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 28 | 19 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.100 | 0.050 | 0.056 | 0.015 |
| cis-1,3-Dichloropropene | 28 | 28 | | | | | | | | | |
| cis-1,3-Dimethylcyclohexane | 28 | 7 | 0.050 | 0.050 | 0.070 | 0.090 | 0.230 | 0.340 | 0.050 | 0.092 | 0.069 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 28 | 22 | 0.050 | 0.050 | 0.050 | 0.050 | 0.110 | 0.140 | 0.050 | 0.058 | 0.023 |
| cis-2-Butene | 28 | 0 | 0.090 | 0.120 | 0.150 | 0.250 | 0.630 | 1.270 | 0.080 | 0.246 | 0.262 |
| cis-2-Heptene | 28 | 12 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.150 | 0.050 | 0.063 | 0.024 |
| cis-2-Hexene | 28 | 16 | 0.050 | 0.050 | 0.050 | 0.070 | 0.150 | 0.270 | 0.050 | 0.074 | 0.055 |
| cis-2-Pentene | 28 | 0 | 0.080 | 0.100 | 0.120 | 0.170 | 0.450 | 0.780 | 0.080 | 0.182 | 0.160 |
| cis-3-Methyl-2-pentene | 28 | 14 | 0.050 | 0.050 | 0.050 | 0.070 | 0.180 | 0.340 | 0.050 | 0.082 | 0.068 |
| cis-4-Methyl-2-pentene | 28 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Cyclohexane | 28 | 0 | 0.080 | 0.160 | 0.200 | 0.360 | 0.460 | 1.750 | 0.070 | 0.316 | 0.350 |
| Cyclohexene | 28 | 17 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.100 | 0.050 | 0.057 | 0.015 |
| Cyclopentane | 28 | 0 | 0.150 | 0.220 | 0.280 | 0.310 | 1.620 | 1.970 | 0.130 | 0.455 | 0.495 |
| Cyclopentene | 28 | 10 | 0.050 | 0.050 | 0.060 | 0.080 | 0.160 | 0.330 | 0.050 | 0.083 | 0.067 |
| Decane | 28 | 0 | 0.140 | 0.230 | 0.350 | 0.630 | 1.360 | 2.510 | 0.140 | 0.517 | 0.533 |
| Dibromochloromethane | 28 | 3 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.110 | 0.050 | 0.061 | 0.013 |
| Dibromomethane | 28 | 0 | 0.080 | 0.100 | 0.100 | 0.110 | 0.120 | 0.140 | 0.080 | 0.103 | 0.015 |
| Dichloromethane | 28 | 0 | 0.250 | 0.420 | 0.550 | 0.920 | 2.580 | 3.560 | 0.240 | 0.865 | 0.819 |
| Dodecane | 28 | 1 | 0.050 | 0.090 | 0.110 | 0.170 | 0.310 | 0.670 | 0.050 | 0.158 | 0.144 |
| EDB | 28 | 4 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.110 | 0.050 | 0.060 | 0.012 |
| Ethane | 28 | 0 | 2.372 | 3.178 | 3.928 | 5.546 | 6.719 | 8.527 | 2.152 | 4.396 | 1.676 |
| Ethylbenzene | 28 | 0 | 0.340 | 0.420 | 0.720 | 1.030 | 1.910 | 4.060 | 0.320 | 0.973 | 0.929 |

## Table 45: VOC Annual Statistics at Kitchener (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbromide | 28 | 28 | | | | | | | | | |
| Ethylene | 28 | 0 | 0.769 | 1.688 | 2.311 | 3.763 | 6.255 | 11.348 | 0.766 | 3.116 | 2.606 |
| Freon11 | 28 | 0 | 1.660 | 1.730 | 1.900 | 2.110 | 2.200 | 2.880 | 1.450 | 1.923 | 0.277 |
| Freon114 | 28 | 0 | 0.220 | 0.230 | 0.240 | 0.260 | 0.280 | 0.310 | 0.200 | 0.244 | 0.026 |
| Freon12 | 28 | 0 | 2.470 | 2.740 | 2.830 | 3.170 | 4.110 | 6.380 | 2.420 | 3.164 | 0.942 |
| Freon22 | 28 | 0 | 0.570 | 0.600 | 0.670 | 0.770 | 1.330 | 2.190 | 0.530 | 0.777 | 0.348 |
| Heptane | 28 | 0 | 0.250 | 0.330 | 0.440 | 0.620 | 1.450 | 2.130 | 0.220 | 0.594 | 0.486 |
| Hexachlorobutadiene | 28 | 28 | | | | | | | | | |
| Hexane | 28 | 0 | 0.440 | 0.740 | 0.910 | 1.340 | 2.540 | 5.490 | 0.380 | 1.248 | 1.114 |
| Hexylbenzene | 25 | 15 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.160 | 0.050 | 0.068 | 0.031 |
| Indane | 28 | 0 | 0.060 | 0.080 | 0.110 | 0.170 | 0.340 | 0.550 | 0.050 | 0.148 | 0.116 |
| Isobutane | 28 | 0 | 0.720 | 1.550 | 2.110 | 2.820 | 7.980 | 13.450 | 0.650 | 2.826 | 2.797 |
| iso-Butylbenzene | 28 | 21 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.050 | 0.054 | 0.013 |
| Isopentane | 28 | 0 | 1.550 | 2.370 | 2.960 | 4.040 | 13.000 | 25.970 | 1.450 | 4.899 | 5.624 |
| Isoprene | 28 | 0 | 0.060 | 0.080 | 0.090 | 0.150 | 0.280 | 0.590 | 0.050 | 0.146 | 0.134 |
| iso-Propylbenzene | 28 | 5 | 0.050 | 0.050 | 0.060 | 0.100 | 0.150 | 0.290 | 0.050 | 0.086 | 0.057 |
| m and p-Xylene | 28 | 0 | 0.830 | 1.150 | 1.920 | 2.560 | 5.690 | 11.700 | 0.800 | 2.678 | 2.694 |
| Methylcyclohexane | 28 | 0 | 0.090 | 0.170 | 0.210 | 0.340 | 0.730 | 1.220 | 0.090 | 0.306 | 0.257 |
| Methylcyclopentane | 28 | 0 | 0.220 | 0.390 | 0.450 | 0.750 | 1.340 | 3.190 | 0.200 | 0.675 | 0.665 |
| n-Butylbenzene | 28 | 8 | 0.050 | 0.050 | 0.050 | 0.080 | 0.180 | 0.240 | 0.050 | 0.075 | 0.048 |
| Nonane | 28 | 0 | 0.110 | 0.180 | 0.210 | 0.340 | 0.870 | 1.230 | 0.110 | 0.320 | 0.287 |
| n-Propylbenzene | 28 | 0 | 0.090 | 0.120 | 0.190 | 0.270 | 0.530 | 0.900 | 0.090 | 0.244 | 0.198 |
| Octane | 28 | 0 | 0.110 | 0.160 | 0.200 | 0.260 | 0.720 | 0.970 | 0.100 | 0.271 | 0.222 |
| o-Xylene | 28 | 0 | 0.290 | 0.410 | 0.690 | 0.900 | 1.740 | 3.780 | 0.280 | 0.890 | 0.826 |
| p-Cymene | 28 | 3 | 0.050 | 0.060 | 0.080 | 0.110 | 0.190 | 0.550 | 0.050 | 0.104 | 0.098 |
| Pentane | 28 | 0 | 1.160 | 1.480 | 1.980 | 2.480 | 8.520 | 11.960 | 0.920 | 2.961 | 2.896 |
| Propane | 28 | 0 | 1.370 | 2.490 | 3.480 | 4.770 | 7.060 | 14.450 | 1.000 | 3.969 | 2.604 |
| Propylene | 28 | 0 | 0.350 | 0.510 | 0.810 | 1.040 | 2.280 | 4.740 | 0.280 | 1.070 | 1.000 |
| sec-Butylbenzene | 28 | 19 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.130 | 0.050 | 0.057 | 0.020 |
| Styrene | 28 | 0 | 0.080 | 0.110 | 0.150 | 0.280 | 0.410 | 0.870 | 0.060 | 0.213 | 0.180 |
| tert-Butylbenzene | 28 | 28 | | | | | | | | | |

## Table 45: VOC Annual Statistics at Kitchener (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethylene | 28 | 0 | 0.140 | 0.160 | 0.270 | 0.450 | 1.190 | 1.470 | 0.120 | 0.404 | 0.361 |
| Toluene | 28 | 0 | 1.410 | 2.040 | 3.330 | 5.840 | 18.020 | 21.230 | 1.340 | 5.241 | 5.484 |
| trans-1,2-Dichloroethylene | 28 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,2-Dimethylcyclohexane | 28 | 14 | 0.050 | 0.050 | 0.050 | 0.070 | 0.160 | 0.240 | 0.050 | 0.072 | 0.046 |
| trans-1,3-Dichloropropene | 28 | 28 | | | | | | | | | |
| trans-1,4-Dimethylcyclohexane | 28 | 21 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.140 | 0.050 | 0.058 | 0.022 |
| trans-2-Butene | 28 | 0 | 0.090 | 0.130 | 0.150 | 0.280 | 0.710 | 1.570 | 0.080 | 0.282 | 0.322 |
| trans-2-Heptene | 28 | 18 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.110 | 0.050 | 0.058 | 0.018 |
| trans-2-Hexene | 28 | 14 | 0.050 | 0.050 | 0.050 | 0.070 | 0.150 | 0.290 | 0.050 | 0.079 | 0.063 |
| trans-2-Pentene | 28 | 0 | 0.080 | 0.110 | 0.130 | 0.220 | 0.650 | 1.210 | 0.070 | 0.233 | 0.259 |
| trans-3-Heptene | 28 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-3-Methyl-2-pentene | 28 | 17 | 0.050 | 0.050 | 0.050 | 0.060 | 0.170 | 0.300 | 0.050 | 0.076 | 0.063 |
| trans-4-Methyl-2-pentene | 28 | 28 | | | | | | | | | |
| Trichloroethylene | 28 | 0 | 0.070 | 0.110 | 0.190 | 0.320 | 0.470 | 1.690 | 0.060 | 0.292 | 0.358 |
| Undecane | 28 | 0 | 0.110 | 0.170 | 0.220 | 0.290 | 1.000 | 1.610 | 0.110 | 0.360 | 0.395 |
| Vinylchloride | 28 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |

*Notes:*

*-VOC sites are operated by Environment Canada*

## Table 46: VOC Annual Statistics at London (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | | 0 | 0.260 | 0.300 | 0.310 | 0.350 | 0.380 | 0.390 | 0.250 | 0.324 | 0.037 |
| 1,1,2,2-Tetrachloroethane | 55 | 8 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.050 | 0.057 | 0.011 |
| 1,1,2-Trichloroethane | 55 | 29 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.051 | 0.004 |
| 1,1-Dichloroethane | 55 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| 1,1-Dichloroethylene | 55 | 7 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.050 | 0.063 | 0.012 |
| 1,2,3-Trimethylbenzene | 55 | 0 | 0.080 | 0.110 | 0.140 | 0.220 | 0.300 | 0.450 | 0.060 | 0.171 | 0.085 |
| 1,2,4-Trichlorobenzene | 55 | 55 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 55 | 0 | 0.290 | 0.410 | 0.540 | 0.780 | 0.980 | 2.030 | 0.190 | 0.643 | 0.357 |
| 1,2-Dichlorobenzene | 55 | 55 | | | | | | | | | |
| 1,2-Dichloroethane | 55 | 0 | 0.060 | 0.060 | 0.070 | 0.090 | 0.100 | 0.100 | 0.050 | 0.076 | 0.014 |
| 1,2-Dichloropropane | 55 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,2-Diethylbenzene | 55 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,3,5-Trimethylbenzene | 55 | 0 | 0.090 | 0.140 | 0.180 | 0.250 | 0.320 | 0.640 | 0.050 | 0.209 | 0.113 |
| 1,3-Butadiene | 55 | 0 | 0.060 | 0.090 | 0.110 | 0.160 | 0.200 | 0.360 | 0.050 | 0.129 | 0.063 |
| 1,3-Dichlorobenzene | 55 | 55 | | | | | | | | | |
| 1,3-Diethylbenzene | 55 | 17 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.110 | 0.050 | 0.060 | 0.015 |
| 1,4-Dichlorobenzene | 55 | 2 | 0.050 | 0.060 | 0.080 | 0.090 | 0.120 | 0.180 | 0.050 | 0.082 | 0.028 |
| 1,4-Dichlorobutane | 55 | 55 | | | | | | | | | |
| 1,4-Diethylbenzene | 55 | 0 | 0.080 | 0.110 | 0.140 | 0.170 | 0.210 | 0.320 | 0.060 | 0.149 | 0.054 |
| 1-Butene/Isobutene | 55 | 0 | 0.250 | 0.350 | 0.430 | 0.550 | 0.750 | 1.530 | 0.240 | 0.495 | 0.240 |
| 1-Butyne | 55 | 55 | | | | | | | | | |
| 1-Decene | 55 | 18 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.130 | 0.050 | 0.064 | 0.021 |
| 1-Heptene | 55 | 0 | 0.060 | 0.080 | 0.100 | 0.130 | 0.170 | 0.460 | 0.050 | 0.118 | 0.065 |
| 1-Hexene | 55 | 0 | 0.130 | 0.160 | 0.170 | 0.210 | 0.250 | 0.370 | 0.050 | 0.186 | 0.049 |
| 1-Methylcyclohexene | 55 | 16 | 0.050 | 0.050 | 0.050 | 0.060 | 0.060 | 0.080 | 0.050 | 0.053 | 0.006 |
| 1-Methylcyclopentene | 55 | 14 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.160 | 0.050 | 0.061 | 0.021 |
| 1-Nonene | 55 | 33 | 0.050 | 0.050 | 0.050 | 0.060 | 0.060 | 0.100 | 0.050 | 0.054 | 0.009 |
| 1-Octene | 55 | 24 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.056 | 0.009 |
| 1-Pentene | 55 | 0 | 0.080 | 0.100 | 0.130 | 0.150 | 0.180 | 0.330 | 0.050 | 0.135 | 0.047 |
| 1-Propyne | 55 | 5 | 0.050 | 0.050 | 0.070 | 0.090 | 0.120 | 0.220 | 0.050 | 0.079 | 0.035 |
| 2,2,3-Trimethylbutane | 55 | 55 | | | | | | | | | |

## Table 46: VOC Annual Statistics at London (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 55 | 0 | 0.170 | 0.300 | 0.390 | 0.500 | 0.620 | 1.460 | 0.130 | 0.431 | 0.225 |
| 2,2,5-Trimethylhexane | 55 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.052 | 0.007 |
| 2,2-Dimethylbutane | 55 | 0 | 0.100 | 0.130 | 0.160 | 0.200 | 0.250 | 0.440 | 0.080 | 0.174 | 0.071 |
| 2,2-Dimethylhexane | 55 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.050 | 0.051 | 0.007 |
| 2,2-Dimethylpentane | 55 | 19 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.160 | 0.050 | 0.060 | 0.021 |
| 2,2-Dimethylpropane | 55 | 26 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.110 | 0.050 | 0.056 | 0.013 |
| 2,3,4-Trimethylpentane | 55 | 1 | 0.060 | 0.100 | 0.140 | 0.170 | 0.220 | 0.450 | 0.050 | 0.148 | 0.072 |
| 2,3-Dimethylbutane | 55 | 0 | 0.130 | 0.210 | 0.290 | 0.400 | 0.500 | 1.150 | 0.110 | 0.327 | 0.196 |
| 2,3-Dimethylpentane | 55 | 0 | 0.120 | 0.170 | 0.230 | 0.290 | 0.360 | 0.990 | 0.090 | 0.256 | 0.142 |
| 2,4-Dimethylhexane | 55 | 1 | 0.050 | 0.080 | 0.100 | 0.130 | 0.160 | 0.360 | 0.050 | 0.111 | 0.052 |
| 2,4-Dimethylpentane | 55 | 0 | 0.060 | 0.090 | 0.120 | 0.170 | 0.200 | 0.460 | 0.060 | 0.137 | 0.072 |
| 2,5-Dimethylhexane | 55 | 8 | 0.050 | 0.050 | 0.070 | 0.090 | 0.110 | 0.250 | 0.050 | 0.079 | 0.036 |
| 2-Ethyl-1-butene | 55 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.050 | 0.051 | 0.007 |
| 2-Ethyltoluene | 55 | 0 | 0.080 | 0.120 | 0.150 | 0.210 | 0.270 | 0.470 | 0.060 | 0.177 | 0.084 |
| 2-methyl-1-butene | 55 | 0 | 0.080 | 0.110 | 0.150 | 0.210 | 0.340 | 0.570 | 0.070 | 0.185 | 0.102 |
| 2-Methyl-2-butene | 55 | 0 | 0.110 | 0.160 | 0.210 | 0.300 | 0.420 | 0.870 | 0.100 | 0.256 | 0.145 |
| 2-Methylheptane | 55 | 0 | 0.070 | 0.110 | 0.150 | 0.200 | 0.270 | 0.480 | 0.060 | 0.172 | 0.084 |
| 2-Methylhexane | 55 | 0 | 0.180 | 0.280 | 0.370 | 0.490 | 0.720 | 1.790 | 0.140 | 0.428 | 0.269 |
| 2-Methylpentane | 55 | 0 | 0.530 | 0.820 | 1.030 | 1.510 | 2.280 | 5.450 | 0.470 | 1.312 | 0.893 |
| 3,6-Dimethyloctane | 55 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.052 | 0.007 |
| 3-Ethyltoluene | 55 | 0 | 0.170 | 0.260 | 0.330 | 0.460 | 0.620 | 1.200 | 0.140 | 0.400 | 0.215 |
| 3-Methyl-1-pentene | 55 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.006 |
| 3-Methylheptane | 55 | 0 | 0.070 | 0.100 | 0.130 | 0.180 | 0.250 | 0.430 | 0.060 | 0.150 | 0.074 |
| 3-Methylhexane | 55 | 0 | 0.190 | 0.310 | 0.420 | 0.570 | 0.860 | 2.530 | 0.150 | 0.511 | 0.375 |
| 3-Methylpentane | 55 | 0 | 0.400 | 0.540 | 0.680 | 1.030 | 1.760 | 6.020 | 0.340 | 0.966 | 0.866 |
| 4-Ethyltoluene | 55 | 0 | 0.090 | 0.160 | 0.200 | 0.270 | 0.340 | 0.620 | 0.090 | 0.229 | 0.107 |
| 4-Methyl-1-pentene | 55 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.050 | 0.053 | 0.009 |
| 4-Methylheptane | 55 | 13 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.190 | 0.050 | 0.070 | 0.028 |
| Acetylene | 55 | 0 | 0.893 | 1.065 | 1.616 | 2.444 | 3.510 | 6.488 | 0.632 | 1.944 | 1.135 |
| Benzene | 55 | 0 | 0.470 | 0.670 | 0.850 | 1.130 | 1.430 | 2.580 | 0.360 | 0.948 | 0.410 |
| Bromodichloromethane | 55 | 2 | 0.050 | 0.070 | 0.080 | 0.080 | 0.120 | 0.140 | 0.050 | 0.080 | 0.022 |

## Table 46: VOC Annual Statistics at London (2000)

Unit: micrograms per cubic metre (µg/m³)

| Compounds | # of Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | PERCENTILES | | | | | | | | |
| Bromoform | 55 | 6 | 0.050 | 0.050 | 0.050 | 0.070 | 0.070 | 0.090 | 0.050 | 0.058 | 0.010 |
| Bromomethane | 55 | 0 | 0.110 | 0.130 | 0.150 | 0.160 | 0.170 | 0.220 | 0.080 | 0.148 | 0.023 |
| Butane | 55 | 0 | 0.910 | 1.490 | 2.560 | 3.840 | 4.930 | 16.780 | 0.710 | 3.225 | 2.805 |
| Carbontetrachloride | 55 | 0 | 0.610 | 0.640 | 0.690 | 0.750 | 0.800 | 0.850 | 0.560 | 0.699 | 0.067 |
| Chlorobenzene | 55 | 55 | | | | | | | | | |
| Chloroethane | 55 | 2 | 0.050 | 0.060 | 0.080 | 0.090 | 0.090 | 0.110 | 0.050 | 0.075 | 0.016 |
| Chloroform | 55 | 0 | 0.090 | 0.110 | 0.120 | 0.130 | 0.150 | 0.160 | 0.080 | 0.122 | 0.019 |
| Chloromethane | 55 | 0 | 1.020 | 1.100 | 1.180 | 1.250 | 1.320 | 1.510 | 1.010 | 1.178 | 0.110 |
| cis-1,2-Dichloroethylene | 55 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 55 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.005 |
| cis-1,3-Dichloropropene | 55 | 54 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.570 | 0.050 | 0.059 | 0.070 |
| cis-1,3-Dimethylcyclohexane | 55 | 15 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.170 | 0.050 | 0.064 | 0.025 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 55 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.005 |
| cis-2-Butene | 55 | 0 | 0.060 | 0.080 | 0.110 | 0.150 | 0.240 | 0.560 | 0.050 | 0.133 | 0.087 |
| cis-2-Heptene | 55 | 25 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.054 | 0.007 |
| cis-2-Hexene | 55 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.050 | 0.054 | 0.011 |
| cis-2-Pentene | 55 | 1 | 0.070 | 0.090 | 0.110 | 0.150 | 0.190 | 0.330 | 0.050 | 0.127 | 0.052 |
| cis-3-Methyl-2-pentene | 55 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.150 | 0.050 | 0.057 | 0.018 |
| cis-4-Methyl-2-pentene | 55 | 55 | | | | | | | | | |
| Cyclohexane | 55 | 0 | 0.070 | 0.110 | 0.140 | 0.230 | 0.330 | 4.480 | 0.050 | 0.283 | 0.627 |
| Cyclohexene | 55 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| Cyclopentane | 55 | 0 | 0.120 | 0.170 | 0.230 | 0.320 | 0.430 | 0.850 | 0.070 | 0.270 | 0.157 |
| Cyclopentene | 55 | 27 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.130 | 0.050 | 0.057 | 0.015 |
| Decane | 55 | 0 | 0.090 | 0.150 | 0.220 | 0.310 | 0.450 | 1.140 | 0.080 | 0.266 | 0.193 |
| Dibromochloromethane | 55 | 4 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.057 | 0.009 |
| Dibromomethane | 55 | 0 | 0.080 | 0.090 | 0.100 | 0.110 | 0.120 | 0.150 | 0.050 | 0.099 | 0.018 |
| Dichloromethane | 55 | 0 | 0.210 | 0.300 | 0.390 | 0.520 | 0.790 | 1.110 | 0.200 | 0.444 | 0.209 |
| Dodecane | 55 | 2 | 0.050 | 0.100 | 0.120 | 0.150 | 0.220 | 0.490 | 0.050 | 0.135 | 0.076 |
| EDB | 55 | 6 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.090 | 0.050 | 0.057 | 0.008 |
| Ethane | 55 | 0 | 1.346 | 2.052 | 2.832 | 4.002 | 5.780 | 10.681 | 1.186 | 3.346 | 1.806 |
| Ethylbenzene | 55 | 0 | 0.260 | 0.360 | 0.490 | 0.690 | 0.990 | 1.870 | 0.200 | 0.584 | 0.346 |

## Table 46: VOC Annual Statistics at London (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Ethylbromide | 55 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 55 | 0 | 0.666 | 1.132 | 1.390 | 2.186 | 3.055 | 5.503 | 0.608 | 1.721 | 0.953 |
| Freon11 | 55 | 0 | 1.600 | 1.710 | 1.820 | 1.950 | 2.090 | 2.700 | 1.580 | 1.854 | 0.211 |
| Freon114 | 55 | 0 | 0.190 | 0.210 | 0.220 | 0.260 | 0.280 | 0.300 | 0.150 | 0.230 | 0.034 |
| Freon12 | 55 | 0 | 2.440 | 2.650 | 2.810 | 2.930 | 3.070 | 3.510 | 2.190 | 2.800 | 0.243 |
| Freon22 | 55 | 0 | 0.500 | 0.620 | 0.670 | 0.700 | 0.800 | 0.950 | 0.470 | 0.673 | 0.094 |
| Heptane | 55 | 0 | 0.200 | 0.290 | 0.350 | 0.450 | 0.650 | 2.410 | 0.170 | 0.459 | 0.380 |
| Hexachlorobutadiene | 55 | 55 | | | | | | | | | |
| Hexane | 55 | 0 | 0.470 | 0.620 | 0.850 | 1.270 | 1.930 | 9.370 | 0.350 | 1.228 | 1.361 |
| Hexylbenzene | 40 | 21 | 0.050 | 0.050 | 0.050 | 0.110 | 0.160 | 0.720 | 0.050 | 0.095 | 0.112 |
| Indane | 55 | 2 | 0.050 | 0.070 | 0.080 | 0.110 | 0.140 | 0.220 | 0.050 | 0.093 | 0.036 |
| Isobutane | 55 | 0 | 0.480 | 0.780 | 1.280 | 1.920 | 2.730 | 8.630 | 0.420 | 1.614 | 1.392 |
| iso-Butylbenzene | 55 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| Isopentane | 55 | 0 | 1.380 | 2.010 | 2.770 | 3.490 | 4.730 | 11.030 | 0.960 | 3.094 | 1.789 |
| Isoprene | 55 | 1 | 0.050 | 0.080 | 0.130 | 0.240 | 0.300 | 0.550 | 0.050 | 0.163 | 0.108 |
| iso-Propylbenzene | 55 | 9 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.130 | 0.050 | 0.063 | 0.018 |
| m and p-Xylene | 55 | 0 | 0.660 | 0.910 | 1.390 | 1.940 | 2.810 | 5.680 | 0.510 | 1.623 | 1.033 |
| Methylcyclohexane | 55 | 0 | 0.090 | 0.130 | 0.160 | 0.210 | 0.350 | 3.000 | 0.060 | 0.253 | 0.406 |
| Methylcyclopentane | 55 | 0 | 0.200 | 0.270 | 0.370 | 0.510 | 0.690 | 2.010 | 0.150 | 0.446 | 0.297 |
| n-Butylbenzene | 55 | 23 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.110 | 0.050 | 0.056 | 0.013 |
| Nonane | 55 | 0 | 0.080 | 0.120 | 0.160 | 0.220 | 0.310 | 0.710 | 0.080 | 0.192 | 0.124 |
| n-Propylbenzene | 55 | 0 | 0.070 | 0.110 | 0.130 | 0.170 | 0.230 | 0.380 | 0.060 | 0.148 | 0.065 |
| Octane | 55 | 0 | 0.090 | 0.140 | 0.170 | 0.200 | 0.280 | 0.470 | 0.090 | 0.186 | 0.077 |
| o-Xylene | 55 | 0 | 0.230 | 0.350 | 0.440 | 0.600 | 0.880 | 1.750 | 0.200 | 0.529 | 0.306 |
| p-Cymene | 55 | 13 | 0.050 | 0.050 | 0.080 | 0.120 | 0.150 | 0.260 | 0.050 | 0.093 | 0.050 |
| Pentane | 55 | 0 | 0.850 | 1.280 | 1.730 | 2.290 | 3.080 | 10.760 | 0.620 | 2.067 | 1.553 |
| Propane | 55 | 0 | 0.990 | 1.580 | 2.660 | 3.570 | 5.150 | 9.570 | 0.980 | 2.942 | 1.842 |
| Propylene | 55 | 0 | 0.270 | 0.410 | 0.510 | 0.710 | 1.010 | 1.700 | 0.260 | 0.589 | 0.286 |
| sec-Butylbenzene | 55 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| Styrene | 55 | 1 | 0.060 | 0.080 | 0.110 | 0.150 | 0.170 | 0.300 | 0.050 | 0.119 | 0.051 |
| tert-Butylbenzene | 55 | 55 | | | | | | | | | |

## Table 46: VOC Annual Statistics at London (2000)

Unit: micrograms per cubic metre (µg/m³)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethylene | 55 | 0 | 0.100 | 0.140 | 0.200 | 0.270 | 0.300 | 0.550 | 0.080 | 0.213 | 0.092 |
| Toluene | 55 | 0 | 1.110 | 1.680 | 2.240 | 3.540 | 5.720 | 10.640 | 0.930 | 2.914 | 1.919 |
| trans-1,2-Dichloroethylene | 55 | 54 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,2-Dimethylcyclohexane | 55 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.130 | 0.050 | 0.054 | 0.015 |
| trans-1,3-Dichloropropene | 55 | 54 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.470 | 0.050 | 0.058 | 0.057 |
| trans-1,4-Dimethylcyclohexane | 55 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.007 |
| trans-2-Butene | 55 | 0 | 0.050 | 0.080 | 0.120 | 0.160 | 0.280 | 0.670 | 0.050 | 0.149 | 0.110 |
| trans-2-Heptene | 55 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| trans-2-Hexene | 55 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.160 | 0.050 | 0.056 | 0.017 |
| trans-2-Pentene | 55 | 0 | 0.060 | 0.090 | 0.110 | 0.170 | 0.250 | 0.470 | 0.050 | 0.143 | 0.082 |
| trans-3-Heptene | 55 | 55 | | | | | | | | | |
| trans-3-Methyl-2-pentene | 55 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.120 | 0.050 | 0.055 | 0.015 |
| trans-4-Methyl-2-pentene | 55 | 55 | | | | | | | | | |
| Trichloroethylene | 55 | 0 | 0.050 | 0.080 | 0.120 | 0.200 | 1.010 | 4.510 | 0.050 | 0.318 | 0.649 |
| Undecane | 55 | 0 | 0.080 | 0.150 | 0.190 | 0.270 | 0.380 | 1.050 | 0.060 | 0.234 | 0.161 |
| Vinylchloride | 55 | 55 | | | | | | | | | |

*Notes:*

*-VOC sites are operated by Environment Canada*

## Table 47: VOC Annual Statistics at Ottawa (2000)

**Unit: micrograms per cubic metre (μg/m$^3$)**

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane |  | 0 | 0.270 | 0.290 | 0.320 | 0.340 | 0.370 | 0.420 | 0.250 | 0.319 | 0.037 |
| 1,1,2,2-Tetrachloroethane | 60 | 17 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.056 | 0.008 |
| 1,1,2-Trichloroethane | 60 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,1-Dichloroethane | 60 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,1-Dichloroethylene | 60 | 12 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.080 | 0.050 | 0.059 | 0.008 |
| 1,2,3-Trimethylbenzene | 60 | 2 | 0.060 | 0.110 | 0.180 | 0.290 | 0.620 | 7.910 | 0.050 | 0.476 | 1.239 |
| 1,2,4-Trichlorobenzene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| 1,2,4-Trimethylbenzene | 60 | 1 | 0.190 | 0.410 | 0.670 | 0.990 | 1.850 | 28.890 | 0.050 | 1.656 | 4.353 |
| 1,2-Dichlorobenzene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| 1,2-Dichloroethane | 60 | 0 | 0.060 | 0.060 | 0.080 | 0.090 | 0.090 | 0.100 | 0.050 | 0.075 | 0.013 |
| 1,2-Dichloropropane | 60 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,2-Diethylbenzene | 60 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.720 | 0.050 | 0.080 | 0.124 |
| 1,3,5-Trimethylbenzene | 60 | 2 | 0.070 | 0.140 | 0.210 | 0.330 | 0.630 | 12.280 | 0.050 | 0.607 | 1.801 |
| 1,3-Butadiene | 60 | 0 | 0.070 | 0.100 | 0.140 | 0.210 | 0.290 | 0.580 | 0.060 | 0.173 | 0.111 |
| 1,3-Dichlorobenzene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| 1,3-Diethylbenzene | 60 | 20 | 0.050 | 0.050 | 0.060 | 0.080 | 0.140 | 1.580 | 0.050 | 0.132 | 0.278 |
| 1,4-Dichlorobenzene | 60 | 0 | 0.090 | 0.120 | 0.160 | 0.210 | 0.320 | 0.400 | 0.070 | 0.172 | 0.078 |
| 1,4-Dichlorobutane | 60 | 60 |  |  |  |  |  |  |  |  |  |
| 1,4-Diethylbenzene | 60 | 1 | 0.050 | 0.090 | 0.150 | 0.270 | 0.430 | 5.640 | 0.050 | 0.422 | 1.081 |
| 1-Butene/Isobutene | 60 | 0 | 0.280 | 0.370 | 0.500 | 0.750 | 1.360 | 2.020 | 0.210 | 0.644 | 0.417 |
| 1-Butyne | 60 | 59 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1-Decene | 60 | 21 | 0.050 | 0.050 | 0.070 | 0.110 | 0.330 | 9.870 | 0.050 | 0.360 | 1.368 |
| 1-Heptene | 60 | 3 | 0.060 | 0.080 | 0.100 | 0.140 | 0.200 | 0.920 | 0.050 | 0.129 | 0.121 |
| 1-Hexene | 60 | 0 | 0.120 | 0.150 | 0.180 | 0.230 | 0.290 | 0.440 | 0.060 | 0.198 | 0.075 |
| 1-Methylcyclohexene | 60 | 23 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.054 | 0.008 |
| 1-Methylcyclopentene | 60 | 10 | 0.050 | 0.050 | 0.060 | 0.080 | 0.160 | 0.240 | 0.050 | 0.077 | 0.041 |
| 1-Nonene | 60 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 2.510 | 0.050 | 0.109 | 0.329 |
| 1-Octene | 60 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 1.610 | 0.050 | 0.077 | 0.201 |
| 1-Pentene | 60 | 0 | 0.090 | 0.120 | 0.150 | 0.190 | 0.290 | 0.490 | 0.050 | 0.168 | 0.083 |
| 1-Propyne | 60 | 7 | 0.050 | 0.060 | 0.080 | 0.100 | 0.160 | 0.310 | 0.050 | 0.096 | 0.061 |
| 2,2,3-Trimethylbutane | 60 | 58 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.050 | 0.003 |

## Table 47: VOC Annual Statistics at Ottawa (2000)

Unit: micrograms per cubic metre (μg/$m^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 2,2,4-Trimethylpentane | 60 | 0 | 0.150 | 0.250 | 0.330 | 0.420 | 0.640 | 1.690 | 0.110 | 0.391 | 0.274 |
| 2,2,5-Trimethylhexane | 60 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.420 | 0.050 | 0.061 | 0.049 |
| 2,2-Dimethylbutane | 60 | 0 | 0.110 | 0.160 | 0.200 | 0.280 | 0.360 | 0.580 | 0.090 | 0.229 | 0.111 |
| 2,2-Dimethylhexane | 60 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.520 | 0.050 | 0.058 | 0.061 |
| 2,2-Dimethylpentane | 60 | 18 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.230 | 0.050 | 0.064 | 0.028 |
| 2,2-Dimethylpropane | 60 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.050 | 0.053 | 0.008 |
| 2,3,4-Trimethylpentane | 60 | 1 | 0.060 | 0.100 | 0.130 | 0.180 | 0.260 | 0.670 | 0.050 | 0.159 | 0.110 |
| 2,3-Dimethylbutane | 60 | 0 | 0.120 | 0.200 | 0.270 | 0.410 | 0.600 | 1.020 | 0.100 | 0.323 | 0.198 |
| 2,3-Dimethylpentane | 60 | 0 | 0.090 | 0.140 | 0.190 | 0.250 | 0.430 | 1.150 | 0.070 | 0.230 | 0.170 |
| 2,4-Dimethylhexane | 60 | 3 | 0.060 | 0.080 | 0.110 | 0.140 | 0.220 | 1.610 | 0.050 | 0.144 | 0.202 |
| 2,4-Dimethylpentane | 60 | 3 | 0.050 | 0.090 | 0.120 | 0.160 | 0.320 | 0.460 | 0.050 | 0.143 | 0.089 |
| 2,5-Dimethylhexane | 60 | 7 | 0.050 | 0.060 | 0.080 | 0.100 | 0.200 | 1.230 | 0.050 | 0.109 | 0.155 |
| 2-Ethyl-1-butene | 60 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.170 | 0.050 | 0.056 | 0.019 |
| 2-Ethyltoluene | 60 | 1 | 0.070 | 0.110 | 0.180 | 0.250 | 0.450 | 7.140 | 0.050 | 0.396 | 1.001 |
| 2-methyl-1-butene | 60 | 1 | 0.100 | 0.160 | 0.200 | 0.280 | 0.520 | 0.910 | 0.050 | 0.255 | 0.170 |
| 2-Methyl-2-butene | 60 | 1 | 0.160 | 0.240 | 0.310 | 0.420 | 0.690 | 1.710 | 0.050 | 0.382 | 0.274 |
| 2-Methylheptane | 60 | 0 | 0.090 | 0.130 | 0.180 | 0.230 | 0.420 | 9.130 | 0.060 | 0.366 | 1.165 |
| 2-Methylhexane | 60 | 0 | 0.170 | 0.280 | 0.390 | 0.530 | 0.880 | 4.050 | 0.130 | 0.498 | 0.529 |
| 2-Methylpentane | 60 | 0 | 0.430 | 0.650 | 0.970 | 1.340 | 1.940 | 3.540 | 0.310 | 1.135 | 0.687 |
| 3,6-Dimethyloctane | 60 | 39 | 0.050 | 0.050 | 0.050 | 0.060 | 0.210 | 11.460 | 0.050 | 0.362 | 1.561 |
| 3-Ethyltoluene | 60 | 1 | 0.140 | 0.270 | 0.410 | 0.570 | 1.120 | 16.100 | 0.050 | 0.891 | 2.270 |
| 3-Methyl-1-pentene | 60 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.050 | 0.053 | 0.009 |
| 3-Methylheptane | 60 | 0 | 0.070 | 0.120 | 0.170 | 0.240 | 0.450 | 8.240 | 0.050 | 0.343 | 1.052 |
| 3-Methylhexane | 60 | 0 | 0.180 | 0.320 | 0.430 | 0.600 | 0.930 | 4.680 | 0.120 | 0.553 | 0.610 |
| 3-Methylpentane | 60 | 0 | 0.270 | 0.450 | 0.600 | 0.880 | 1.280 | 1.950 | 0.180 | 0.714 | 0.413 |
| 4-Ethyltoluene | 60 | 1 | 0.090 | 0.170 | 0.230 | 0.300 | 0.550 | 7.950 | 0.050 | 0.472 | 1.123 |
| 4-Methyl-1-pentene | 60 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.053 | 0.008 |
| 4-Methylheptane | 60 | 12 | 0.050 | 0.050 | 0.070 | 0.100 | 0.180 | 3.260 | 0.050 | 0.145 | 0.415 |
| Acetylene | 60 | 0 | 0.709 | 1.124 | 1.663 | 3.240 | 4.530 | 6.995 | 0.637 | 2.244 | 1.535 |
| Benzene | 60 | 0 | 0.400 | 0.650 | 0.830 | 1.320 | 2.080 | 3.460 | 0.340 | 1.081 | 0.697 |
| Bromodichloromethane | 60 | 1 | 0.050 | 0.060 | 0.080 | 0.090 | 0.114 | 0.160 | 0.050 | 0.081 | 0.023 |

## Table 47: VOC Annual Statistics at Ottawa (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Bromoform | 60 | 15 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.056 | 0.009 |
| Bromomethane | 60 | 0 | 0.100 | 0.130 | 0.140 | 0.150 | 0.170 | 0.220 | 0.090 | 0.139 | 0.020 |
| Butane | 60 | 0 | 0.790 | 1.240 | 1.850 | 3.940 | 7.090 | 11.430 | 0.590 | 3.039 | 2.627 |
| Carbontetrachloride | 60 | 0 | 0.600 | 0.630 | 0.690 | 0.720 | 0.810 | 0.870 | 0.570 | 0.689 | 0.070 |
| Chlorobenzene | 60 | 60 | | | | | | | | | |
| Chloroethane | 60 | 5 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.130 | 0.050 | 0.073 | 0.017 |
| Chloroform | 60 | 0 | 0.110 | 0.130 | 0.150 | 0.200 | 0.260 | 1.250 | 0.090 | 0.188 | 0.156 |
| Chloromethane | 60 | 0 | 0.950 | 1.030 | 1.110 | 1.210 | 1.280 | 1.420 | 0.920 | 1.128 | 0.119 |
| cis-1,2-Dichloroethylene | 60 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 60 | 47 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 1.290 | 0.050 | 0.076 | 0.161 |
| cis-1,3-Dichloropropene | 60 | 60 | | | | | | | | | |
| cis-1,3-Dimethylcyclohexane | 60 | 19 | 0.050 | 0.050 | 0.060 | 0.080 | 0.120 | 7.410 | 0.050 | 0.203 | 0.950 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 60 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 1.950 | 0.050 | 0.087 | 0.246 |
| cis-2-Butene | 60 | 1 | 0.090 | 0.120 | 0.150 | 0.250 | 0.480 | 0.730 | 0.050 | 0.210 | 0.146 |
| cis-2-Heptene | 60 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.130 | 0.050 | 0.054 | 0.013 |
| cis-2-Hexene | 60 | 30 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.190 | 0.050 | 0.064 | 0.029 |
| cis-2-Pentene | 60 | 1 | 0.090 | 0.120 | 0.160 | 0.200 | 0.320 | 0.640 | 0.050 | 0.181 | 0.101 |
| cis-3-Methyl-2-pentene | 60 | 19 | 0.050 | 0.050 | 0.060 | 0.070 | 0.120 | 0.230 | 0.050 | 0.068 | 0.032 |
| cis-4-Methyl-2-pentene | 60 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Cyclohexane | 60 | 1 | 0.060 | 0.090 | 0.130 | 0.190 | 0.330 | 2.190 | 0.050 | 0.188 | 0.279 |
| Cyclohexene | 60 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| Cyclopentane | 60 | 0 | 0.090 | 0.130 | 0.180 | 0.260 | 0.440 | 0.660 | 0.070 | 0.224 | 0.142 |
| Cyclopentene | 60 | 17 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.190 | 0.050 | 0.068 | 0.033 |
| Decane | 60 | 1 | 0.100 | 0.200 | 0.320 | 0.710 | 3.630 | 94.650 | 0.050 | 4.210 | 15.709 |
| Dibromochloromethane | 60 | 13 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.080 | 0.050 | 0.058 | 0.009 |
| Dibromomethane | 60 | 0 | 0.070 | 0.090 | 0.100 | 0.110 | 0.120 | 0.120 | 0.060 | 0.096 | 0.016 |
| Dichloromethane | 60 | 0 | 0.230 | 0.320 | 0.410 | 0.560 | 0.770 | 2.470 | 0.220 | 0.513 | 0.398 |
| Dodecane | 60 | 11 | 0.050 | 0.060 | 0.130 | 0.200 | 0.680 | 29.540 | 0.050 | 1.280 | 5.147 |
| EDB | 60 | 12 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.057 | 0.008 |
| Ethane | 60 | 0 | 1.180 | 1.516 | 2.524 | 3.714 | 4.664 | 9.325 | 1.087 | 2.789 | 1.566 |
| Ethylbenzene | 60 | 0 | 0.220 | 0.370 | 0.530 | 0.680 | 1.260 | 3.900 | 0.110 | 0.646 | 0.578 |

## Table 47: VOC Annual Statistics at Ottawa (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES |  |  |  |  | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  | 5% | 25% | 50% | 75% | 90% |  |  |  |  |
| Ethylbromide | 60 | 59 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 60 | 0 | 0.697 | 1.073 | 1.406 | 2.838 | 4.213 | 8.007 | 0.485 | 2.093 | 1.628 |
| Freon11 | 60 | 0 | 1.530 | 1.670 | 1.730 | 1.800 | 1.900 | 2.230 | 1.460 | 1.740 | 0.143 |
| Freon114 | 60 | 0 | 0.170 | 0.200 | 0.220 | 0.230 | 0.240 | 0.260 | 0.150 | 0.215 | 0.022 |
| Freon12 | 60 | 0 | 2.430 | 2.640 | 2.770 | 2.860 | 2.990 | 3.380 | 2.270 | 2.751 | 0.209 |
| Freon22 | 60 | 0 | 0.550 | 0.610 | 0.640 | 0.730 | 0.890 | 1.360 | 0.480 | 0.685 | 0.141 |
| Heptane | 60 | 0 | 0.170 | 0.250 | 0.350 | 0.450 | 0.630 | 12.510 | 0.130 | 0.576 | 1.578 |
| Hexachlorobutadiene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| Hexane | 60 | 0 | 0.280 | 0.440 | 0.600 | 0.860 | 1.670 | 2.760 | 0.190 | 0.732 | 0.473 |
| Hexylbenzene | 49 | 23 | 0.050 | 0.050 | 0.050 | 0.110 | 0.140 | 0.720 | 0.050 | 0.112 | 0.156 |
| Indane | 60 | 5 | 0.050 | 0.070 | 0.100 | 0.150 | 0.240 | 1.640 | 0.050 | 0.167 | 0.257 |
| Isobutane | 60 | 0 | 0.490 | 0.820 | 1.320 | 2.500 | 4.520 | 7.280 | 0.410 | 1.928 | 1.591 |
| iso-Butylbenzene | 60 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 1.060 | 0.050 | 0.087 | 0.159 |
| Isopentane | 60 | 0 | 1.080 | 1.590 | 2.410 | 3.610 | 5.880 | 8.330 | 0.820 | 2.916 | 1.805 |
| Isoprene | 60 | 1 | 0.060 | 0.110 | 0.160 | 0.430 | 0.960 | 1.880 | 0.050 | 0.345 | 0.398 |
| iso-Propylbenzene | 60 | 10 | 0.050 | 0.050 | 0.060 | 0.080 | 0.140 | 2.570 | 0.050 | 0.131 | 0.338 |
| m and p-Xylene | 60 | 0 | 0.540 | 0.940 | 1.400 | 1.970 | 3.620 | 19.300 | 0.100 | 1.947 | 2.599 |
| Methylcyclohexane | 60 | 0 | 0.070 | 0.110 | 0.170 | 0.220 | 0.390 | 14.800 | 0.060 | 0.435 | 1.889 |
| Methylcyclopentane | 60 | 0 | 0.190 | 0.300 | 0.410 | 0.590 | 1.100 | 1.500 | 0.120 | 0.498 | 0.312 |
| n-Butylbenzene | 60 | 23 | 0.050 | 0.050 | 0.050 | 0.090 | 0.180 | 1.770 | 0.050 | 0.147 | 0.333 |
| Nonane | 60 | 1 | 0.080 | 0.140 | 0.220 | 0.440 | 1.650 | 103.270 | 0.050 | 3.013 | 14.212 |
| n-Propylbenzene | 60 | 1 | 0.070 | 0.120 | 0.160 | 0.220 | 0.390 | 5.940 | 0.050 | 0.332 | 0.815 |
| Octane | 60 | 0 | 0.080 | 0.130 | 0.170 | 0.220 | 0.420 | 25.300 | 0.060 | 0.696 | 3.276 |
| o-Xylene | 60 | 0 | 0.210 | 0.340 | 0.540 | 0.710 | 1.360 | 9.770 | 0.050 | 0.780 | 1.282 |
| p-Cymene | 60 | 17 | 0.050 | 0.050 | 0.100 | 0.170 | 0.350 | 1.850 | 0.050 | 0.181 | 0.292 |
| Pentane | 60 | 0 | 0.540 | 0.790 | 1.130 | 1.680 | 2.650 | 3.790 | 0.410 | 1.373 | 0.828 |
| Propane | 60 | 0 | 0.900 | 1.250 | 2.090 | 3.380 | 4.580 | 8.340 | 0.700 | 2.490 | 1.598 |
| Propylene | 60 | 0 | 0.290 | 0.420 | 0.560 | 0.860 | 1.330 | 2.610 | 0.190 | 0.727 | 0.515 |
| sec-Butylbenzene | 60 | 41 | 0.050 | 0.050 | 0.050 | 0.060 | 0.120 | 1.740 | 0.050 | 0.113 | 0.258 |
| Styrene | 60 | 10 | 0.050 | 0.070 | 0.100 | 0.140 | 0.210 | 0.420 | 0.050 | 0.115 | 0.071 |
| tert-Butylbenzene | 60 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.480 | 0.050 | 0.066 | 0.071 |

## Table 47: VOC Annual Statistics at Ottawa (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Tetrachloroethylene | 60 | 0 | 0.130 | 0.210 | 0.360 | 0.760 | 1.050 | 2.210 | 0.090 | 0.505 | 0.416 |
| Toluene | 60 | 0 | 1.070 | 2.040 | 2.880 | 3.970 | 7.330 | 21.970 | 0.700 | 3.630 | 3.267 |
| trans-1,2-Dichloroethylene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| trans-1,2-Dimethylcyclohexane | 60 | 41 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 5.700 | 0.050 | 0.164 | 0.731 |
| trans-1,3-Dichloropropene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| trans-1,4-Dimethylcyclohexane | 60 | 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 3.440 | 0.050 | 0.112 | 0.438 |
| trans-2-Butene | 60 | 1 | 0.090 | 0.130 | 0.160 | 0.300 | 0.570 | 0.880 | 0.050 | 0.237 | 0.179 |
| trans-2-Heptene | 60 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.050 | 0.052 | 0.008 |
| trans-2-Hexene | 60 | 21 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.230 | 0.050 | 0.067 | 0.031 |
| trans-2-Pentene | 60 | 1 | 0.090 | 0.150 | 0.180 | 0.260 | 0.490 | 0.970 | 0.050 | 0.236 | 0.163 |
| trans-3-Heptene | 60 | 59 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| trans-3-Methyl-2-pentene | 60 | 31 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.210 | 0.050 | 0.063 | 0.030 |
| trans-4-Methyl-2-pentene | 60 | 60 |  |  |  |  |  |  |  |  |  |
| Trichloroethylene | 60 | 1 | 0.050 | 0.070 | 0.090 | 0.130 | 0.170 | 0.660 | 0.050 | 0.110 | 0.083 |
| Undecane | 60 | 1 | 0.070 | 0.120 | 0.250 | 0.540 | 2.180 | 66.130 | 0.050 | 3.441 | 12.707 |
| Vinylchloride | 60 | 60 |  |  |  |  |  |  |  |  |  |

*Notes:*

*-VOC site are operated by Environment Canada*

## Table 48: VOC Annual Statistics at Point Petre (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | | 0 | 0.380 | 0.430 | 0.530 | 0.640 | 0.770 | 6.030 | 0.270 | 0.678 | 0.822 |
| 1,1,2,2-Tetrachloroethane | 47 | 10 | 0.050 | 0.050 | 0.050 | 0.060 | 0.060 | 0.090 | 0.050 | 0.056 | 0.009 |
| 1,1,2-Trichloroethane | 47 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| 1,1-Dichloroethane | 47 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,1-Dichloroethylene | 47 | 5 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.090 | 0.050 | 0.061 | 0.010 |
| 1,2,3-Trimethylbenzene | 47 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.053 | 0.007 |
| 1,2,4-Trichlorobenzene | 47 | 47 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 47 | 1 | 0.060 | 0.080 | 0.110 | 0.140 | 0.180 | 0.310 | 0.050 | 0.116 | 0.052 |
| 1,2-Dichlorobenzene | 47 | 47 | | | | | | | | | |
| 1,2-Dichloroethane | 47 | 0 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.110 | 0.050 | 0.071 | 0.014 |
| 1,2-Dichloropropane | 47 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| 1,2-Diethylbenzene | 47 | 47 | | | | | | | | | |
| 1,3,5-Trimethylbenzene | 47 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.007 |
| 1,3-Butadiene | 47 | 37 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.007 |
| 1,3-Dichlorobenzene | 47 | 47 | | | | | | | | | |
| 1,3-Diethylbenzene | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,4-Dichlorobenzene | 47 | 25 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.006 |
| 1,4-Dichlorobutane | 47 | 47 | | | | | | | | | |
| 1,4-Diethylbenzene | 47 | 13 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.110 | 0.050 | 0.060 | 0.015 |
| 1-Butene/Isobutene | 47 | 0 | 0.130 | 0.150 | 0.180 | 0.220 | 0.270 | 0.390 | 0.110 | 0.188 | 0.052 |
| 1-Butyne | 47 | 47 | | | | | | | | | |
| 1-Decene | 47 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.006 |
| 1-Heptene | 47 | 22 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.053 | 0.007 |
| 1-Hexene | 47 | 0 | 0.060 | 0.100 | 0.120 | 0.150 | 0.170 | 0.200 | 0.060 | 0.126 | 0.034 |
| 1-Methylcyclohexene | 47 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| 1-Methylcyclopentene | 47 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1-Nonene | 47 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.005 |
| 1-Octene | 47 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| 1-Pentene | 47 | 6 | 0.050 | 0.050 | 0.060 | 0.080 | 0.080 | 0.100 | 0.050 | 0.064 | 0.014 |
| 1-Propyne | 47 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.052 | 0.006 |
| 2,2,3-Trimethylbutane | 47 | 47 | | | | | | | | | |

## Table 48: VOC Annual Statistics at Point Petre (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 47 | 0 | 0.050 | 0.090 | 0.120 | 0.150 | 0.220 | 0.380 | 0.050 | 0.134 | 0.072 |
| 2,2,5-Trimethylhexane | 47 | 47 | | | | | | | | | |
| 2,2-Dimethylbutane | 47 | 0 | 0.060 | 0.080 | 0.090 | 0.110 | 0.130 | 0.160 | 0.060 | 0.095 | 0.024 |
| 2,2-Dimethylhexane | 47 | 47 | | | | | | | | | |
| 2,2-Dimethylpentane | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 2,2-Dimethylpropane | 47 | 37 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.004 |
| 2,3,4-Trimethylpentane | 47 | 30 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.130 | 0.050 | 0.058 | 0.017 |
| 2,3-Dimethylbutane | 47 | 9 | 0.050 | 0.050 | 0.060 | 0.100 | 0.130 | 0.190 | 0.050 | 0.079 | 0.037 |
| 2,3-Dimethylpentane | 47 | 5 | 0.050 | 0.050 | 0.070 | 0.080 | 0.120 | 0.150 | 0.050 | 0.075 | 0.028 |
| 2,4-Dimethylhexane | 47 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.053 | 0.007 |
| 2,4-Dimethylpentane | 47 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.050 | 0.054 | 0.009 |
| 2,5-Dimethylhexane | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| 2-Ethyl-1-butene | 47 | 47 | | | | | | | | | |
| 2-Ethyltoluene | 47 | 29 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.050 | 0.054 | 0.011 |
| 2-methyl-1-butene | 47 | 22 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.050 | 0.057 | 0.013 |
| 2-Methyl-2-butene | 47 | 23 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.052 | 0.006 |
| 2-Methylheptane | 47 | 16 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.050 | 0.059 | 0.015 |
| 2-Methylhexane | 47 | 3 | 0.050 | 0.060 | 0.090 | 0.120 | 0.190 | 0.260 | 0.050 | 0.103 | 0.052 |
| 2-Methylpentane | 47 | 0 | 0.140 | 0.180 | 0.260 | 0.384 | 0.540 | 0.700 | 0.110 | 0.304 | 0.154 |
| 3,6-Dimethyloctane | 47 | 47 | | | | | | | | | |
| 3-Ethyltoluene | 47 | 13 | 0.050 | 0.050 | 0.060 | 0.090 | 0.120 | 0.210 | 0.050 | 0.074 | 0.033 |
| 3-Methyl-1-pentene | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 3-Methylheptane | 47 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.050 | 0.053 | 0.009 |
| 3-Methylhexane | 47 | 2 | 0.050 | 0.070 | 0.100 | 0.140 | 0.200 | 0.330 | 0.050 | 0.118 | 0.060 |
| 3-Methylpentane | 47 | 0 | 0.110 | 0.150 | 0.190 | 0.270 | 0.360 | 0.500 | 0.080 | 0.217 | 0.093 |
| 4-Ethyltoluene | 47 | 6 | 0.050 | 0.050 | 0.060 | 0.080 | 0.100 | 0.150 | 0.050 | 0.068 | 0.022 |
| 4-Methyl-1-pentene | 47 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 4-Methylheptane | 47 | 45 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Acetylene | 47 | 0 | 0.290 | 0.436 | 0.758 | 1.259 | 1.464 | 2.132 | 0.220 | 0.863 | 0.496 |
| Benzene | 47 | 0 | 0.180 | 0.240 | 0.410 | 0.720 | 0.780 | 1.200 | 0.140 | 0.467 | 0.257 |
| Bromodichloromethane | 47 | 6 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.180 | 0.050 | 0.067 | 0.024 |

# Table 48: VOC Annual Statistics at Point Petre (2000)

**Unit: micrograms per cubic metre ($\mu g/m^3$)**

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Bromoform | 47 | 6 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.050 | 0.056 | 0.007 |
| Bromomethane | 47 | 0 | 0.100 | 0.130 | 0.150 | 0.160 | 0.170 | 0.210 | 0.090 | 0.147 | 0.024 |
| Butane | 47 | 0 | 0.280 | 0.430 | 0.890 | 1.430 | 2.060 | 3.040 | 0.200 | 1.022 | 0.718 |
| Carbontetrachloride | 47 | 0 | 0.620 | 0.650 | 0.700 | 0.760 | 0.830 | 0.930 | 0.610 | 0.720 | 0.081 |
| Chlorobenzene | 47 | 47 |  |  |  |  |  |  |  |  |  |
| Chloroethane | 47 | 3 | 0.050 | 0.050 | 0.060 | 0.080 | 0.080 | 0.090 | 0.050 | 0.065 | 0.013 |
| Chloroform | 47 | 0 | 0.090 | 0.100 | 0.100 | 0.120 | 0.120 | 0.150 | 0.080 | 0.107 | 0.015 |
| Chloromethane | 47 | 0 | 1.020 | 1.090 | 1.150 | 1.220 | 1.400 | 1.590 | 0.910 | 1.173 | 0.131 |
| cis-1,2-Dichloroethylene | 47 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 47 | 47 |  |  |  |  |  |  |  |  |  |
| cis-1,3-Dichloropropene | 47 | 47 |  |  |  |  |  |  |  |  |  |
| cis-1,3-Dimethylcyclohexane | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 47 | 47 |  |  |  |  |  |  |  |  |  |
| cis-2-Butene | 47 | 45 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-2-Heptene | 47 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-2-Hexene | 47 | 47 |  |  |  |  |  |  |  |  |  |
| cis-2-Pentene | 47 | 19 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.050 | 0.054 | 0.007 |
| cis-3-Methyl-2-pentene | 47 | 47 |  |  |  |  |  |  |  |  |  |
| cis-4-Methyl-2-pentene | 47 | 47 |  |  |  |  |  |  |  |  |  |
| Cyclohexane | 47 | 11 | 0.050 | 0.050 | 0.070 | 0.090 | 0.130 | 0.210 | 0.050 | 0.080 | 0.038 |
| Cyclohexene | 47 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| Cyclopentane | 47 | 14 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.140 | 0.050 | 0.069 | 0.025 |
| Cyclopentene | 47 | 47 |  |  |  |  |  |  |  |  |  |
| Decane | 47 | 9 | 0.050 | 0.050 | 0.060 | 0.090 | 0.120 | 0.180 | 0.050 | 0.075 | 0.032 |
| Dibromochloromethane | 47 | 9 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.056 | 0.009 |
| Dibromomethane | 47 | 0 | 0.060 | 0.090 | 0.100 | 0.110 | 0.110 | 0.120 | 0.050 | 0.094 | 0.017 |
| Dichloromethane | 11 | 0 | 0.350 | 0.570 | 1.010 | 3.340 | 12.400 | 21.160 | 0.350 | 3.981 | 6.677 |
| Dodecane | 47 | 6 | 0.050 | 0.060 | 0.070 | 0.090 | 0.110 | 146.000 | 0.050 | 3.183 | 21.285 |
| EDB | 47 | 8 | 0.050 | 0.050 | 0.050 | 0.060 | 0.060 | 0.090 | 0.050 | 0.056 | 0.009 |
| Ethane | 47 | 0 | 0.986 | 1.398 | 2.132 | 2.819 | 3.752 | 5.486 | 0.836 | 2.229 | 1.063 |
| Ethylbenzene | 47 | 0 | 0.080 | 0.110 | 0.150 | 0.190 | 0.300 | 0.460 | 0.070 | 0.170 | 0.083 |

## Table 48: VOC Annual Statistics at Point Petre (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbromide | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 47 | 0 | 0.228 | 0.293 | 0.400 | 0.658 | 1.037 | 1.385 | 0.179 | 0.517 | 0.306 |
| Freon11 | 47 | 0 | 1.640 | 1.720 | 1.830 | 1.960 | 2.110 | 2.800 | 1.600 | 1.873 | 0.219 |
| Freon114 | 47 | 0 | 0.170 | 0.200 | 0.210 | 0.250 | 0.270 | 0.280 | 0.160 | 0.224 | 0.031 |
| Freon12 | 47 | 0 | 2.770 | 3.190 | 3.430 | 3.830 | 4.090 | 8.120 | 2.670 | 3.570 | 0.804 |
| Freon22 | 47 | 0 | 0.490 | 0.530 | 0.570 | 0.600 | 0.650 | 0.780 | 0.470 | 0.570 | 0.060 |
| Heptane | 47 | 0 | 0.090 | 0.110 | 0.140 | 0.180 | 0.230 | 0.380 | 0.070 | 0.151 | 0.056 |
| Hexachlorobutadiene | 47 | 47 | | | | | | | | | |
| Hexane | 47 | 0 | 0.170 | 0.300 | 0.420 | 0.730 | 2.000 | 9.910 | 0.130 | 0.927 | 1.736 |
| Hexylbenzene | 37 | 24 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.150 | 0.050 | 0.062 | 0.025 |
| Indane | 47 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| Isobutane | 47 | 0 | 0.140 | 0.230 | 0.380 | 0.720 | 1.070 | 1.310 | 0.100 | 0.503 | 0.325 |
| iso-Butylbenzene | 47 | 47 | | | | | | | | | |
| Isopentane | 47 | 0 | 0.350 | 0.530 | 0.710 | 1.040 | 1.390 | 1.910 | 0.250 | 0.821 | 0.396 |
| Isoprene | 47 | 23 | 0.050 | 0.050 | 0.050 | 0.130 | 0.340 | 0.510 | 0.050 | 0.123 | 0.131 |
| iso-Propylbenzene | 47 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| m and p-Xylene | 47 | 0 | 0.180 | 0.220 | 0.340 | 0.450 | 0.690 | 1.430 | 0.120 | 0.378 | 0.228 |
| Methylcyclohexane | 47 | 16 | 0.050 | 0.050 | 0.060 | 0.080 | 0.110 | 0.190 | 0.050 | 0.070 | 0.029 |
| Methylcyclopentane | 47 | 1 | 0.050 | 0.090 | 0.130 | 0.200 | 0.360 | 1.500 | 0.050 | 0.211 | 0.267 |
| n-Butylbenzene | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Nonane | 47 | 15 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.120 | 0.050 | 0.063 | 0.018 |
| n-Propylbenzene | 47 | 26 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.050 | 0.054 | 0.010 |
| Octane | 47 | 4 | 0.050 | 0.050 | 0.070 | 0.080 | 0.100 | 0.120 | 0.050 | 0.069 | 0.019 |
| o-Xylene | 47 | 0 | 0.070 | 0.090 | 0.120 | 0.170 | 0.230 | 0.490 | 0.050 | 0.142 | 0.078 |
| p-Cymene | 47 | 17 | 0.050 | 0.050 | 0.060 | 0.090 | 0.130 | 0.330 | 0.050 | 0.076 | 0.047 |
| Pentane | 47 | 0 | 0.200 | 0.310 | 0.410 | 0.590 | 0.860 | 1.140 | 0.160 | 0.476 | 0.236 |
| Propane | 47 | 0 | 0.410 | 0.800 | 1.250 | 2.050 | 3.060 | 4.400 | 0.076 | 1.562 | 1.037 |
| Propylene | 47 | 0 | 0.100 | 0.120 | 0.140 | 0.200 | 0.280 | 0.430 | 0.100 | 0.169 | 0.070 |
| sec-Butylbenzene | 47 | 47 | | | | | | | | | |
| Styrene | 47 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.120 | 0.050 | 0.053 | 0.011 |
| tert-Butylbenzene | 47 | 47 | | | | | | | | | |

## Table 48: VOC Annual Statistics at Point Petre (2000)

### Unit: micrograms per cubic metre ($\mu g/m^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Tetrachloroethylene | 47 | 0 | 0.140 | 0.180 | 0.220 | 0.260 | 0.330 | 2.060 | 0.130 | 0.266 | 0.276 |
| Toluene | 47 | 0 | 0.430 | 0.600 | 0.830 | 1.190 | 1.810 | 5.080 | 0.330 | 1.031 | 0.782 |
| trans-1,2-Dichloroethylene | 47 | 47 | | | | | | | | | |
| trans-1,2-Dimethylcyclohexane | 47 | 47 | | | | | | | | | |
| trans-1,3-Dichloropropene | 47 | 47 | | | | | | | | | |
| trans-1,4-Dimethylcyclohexane | 47 | 47 | | | | | | | | | |
| trans-2-Butene | 47 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-2-Heptene | 47 | 47 | | | | | | | | | |
| trans-2-Hexene | 47 | 47 | | | | | | | | | |
| trans-2-Pentene | 47 | 47 | | | | | | | | | |
| trans-3-Heptene | 47 | 47 | | | | | | | | | |
| trans-3-Methyl-2-pentene | 47 | 47 | | | | | | | | | |
| trans-4-Methyl-2-pentene | 47 | 47 | | | | | | | | | |
| Trichloroethylene | 47 | 0 | 0.060 | 0.070 | 0.090 | 0.100 | 0.120 | 0.190 | 0.050 | 0.089 | 0.025 |
| Undecane | 47 | 3 | 0.050 | 0.060 | 0.080 | 0.100 | 0.130 | 0.300 | 0.050 | 0.089 | 0.045 |
| Vinylchloride | 47 | 47 | | | | | | | | | |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 49: VOC Annual Statistics at Sarnia (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | | 0 | 0.180 | 0.270 | 0.310 | 0.340 | 0.360 | 0.710 | 0.160 | 0.306 | 0.076 |
| 1,1,2,2-Tetrachloroethane | 58 | 12 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.057 | 0.009 |
| 1,1,2-Trichloroethane | 58 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| 1,1-Dichloroethane | 58 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| 1,1-Dichloroethylene | 58 | 9 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.090 | 0.050 | 0.063 | 0.012 |
| 1,2,3-Trimethylbenzene | 58 | 1 | 0.060 | 0.090 | 0.150 | 0.260 | 0.380 | 1.050 | 0.050 | 0.195 | 0.156 |
| 1,2,4-Trichlorobenzene | 58 | 58 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 58 | 0 | 0.210 | 0.330 | 0.580 | 1.010 | 1.470 | 4.820 | 0.120 | 0.767 | 0.688 |
| 1,2-Dichlorobenzene | 58 | 58 | | | | | | | | | |
| 1,2-Dichloroethane | 58 | 1 | 0.050 | 0.070 | 0.070 | 0.090 | 0.110 | 0.270 | 0.050 | 0.082 | 0.032 |
| 1,2-Dichloropropane | 58 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,2-Diethylbenzene | 58 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.004 |
| 1,3,5-Trimethylbenzene | 58 | 1 | 0.070 | 0.100 | 0.180 | 0.320 | 0.450 | 1.470 | 0.050 | 0.242 | 0.213 |
| 1,3-Butadiene | 58 | 0 | 0.060 | 0.100 | 0.170 | 0.510 | 0.860 | 1.570 | 0.050 | 0.344 | 0.360 |
| 1,3-Dichlorobenzene | 58 | 58 | | | | | | | | | |
| 1,3-Diethylbenzene | 58 | 15 | 0.050 | 0.050 | 0.060 | 0.100 | 0.120 | 0.310 | 0.050 | 0.077 | 0.043 |
| 1,4-Dichlorobenzene | 58 | 0 | 0.090 | 0.110 | 0.150 | 0.220 | 0.320 | 0.450 | 0.070 | 0.182 | 0.094 |
| 1,4-Dichlorobutane | 58 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.005 |
| 1,4-Diethylbenzene | 58 | 1 | 0.060 | 0.110 | 0.150 | 0.240 | 0.370 | 0.980 | 0.050 | 0.193 | 0.143 |
| 1-Butene/Isobutene | 58 | 0 | 0.280 | 0.450 | 0.720 | 2.110 | 3.820 | 5.690 | 0.200 | 1.457 | 1.435 |
| 1-Butyne | 58 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1-Decene | 56 | 18 | 0.050 | 0.050 | 0.060 | 0.100 | 0.130 | 0.250 | 0.050 | 0.083 | 0.046 |
| 1-Heptene | 58 | 1 | 0.050 | 0.090 | 0.120 | 0.260 | 0.390 | 0.620 | 0.050 | 0.176 | 0.131 |
| 1-Hexene | 58 | 0 | 0.130 | 0.190 | 0.270 | 0.610 | 1.760 | 5.430 | 0.110 | 0.652 | 0.994 |
| 1-Methylcyclohexene | 58 | 13 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.110 | 0.050 | 0.057 | 0.011 |
| 1-Methylcyclopentene | 58 | 12 | 0.050 | 0.050 | 0.060 | 0.090 | 0.110 | 0.390 | 0.050 | 0.077 | 0.049 |
| 1-Nonene | 58 | 33 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.130 | 0.050 | 0.057 | 0.014 |
| 1-Octene | 58 | 20 | 0.050 | 0.050 | 0.060 | 0.080 | 0.130 | 0.510 | 0.050 | 0.085 | 0.083 |
| 1-Pentene | 58 | 0 | 0.070 | 0.110 | 0.160 | 0.300 | 0.400 | 0.660 | 0.060 | 0.211 | 0.139 |
| 1-Propyne | 58 | 4 | 0.050 | 0.060 | 0.080 | 0.130 | 0.150 | 0.650 | 0.050 | 0.103 | 0.085 |
| 2,2,3-Trimethylbutane | 58 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.006 |

## Table 49: VOC Annual Statistics at Sarnia (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 58 | 0 | 0.150 | 0.260 | 0.530 | 1.270 | 2.610 | 6.620 | 0.100 | 0.973 | 1.158 |
| 2,2,5-Trimethylhexane | 58 | 30 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.510 | 0.050 | 0.072 | 0.065 |
| 2,2-Dimethylbutane | 58 | 0 | 0.100 | 0.160 | 0.230 | 0.480 | 0.610 | 0.940 | 0.080 | 0.314 | 0.214 |
| 2,2-Dimethylhexane | 58 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.050 | 0.053 | 0.010 |
| 2,2-Dimethylpentane | 58 | 20 | 0.050 | 0.050 | 0.060 | 0.110 | 0.170 | 0.410 | 0.050 | 0.090 | 0.067 |
| 2,2-Dimethylpropane | 58 | 11 | 0.050 | 0.050 | 0.060 | 0.100 | 0.140 | 0.230 | 0.050 | 0.079 | 0.040 |
| 2,3,4-Trimethylpentane | 58 | 0 | 0.050 | 0.100 | 0.180 | 0.380 | 0.680 | 2.540 | 0.050 | 0.303 | 0.377 |
| 2,3-Dimethylbutane | 58 | 0 | 0.110 | 0.210 | 0.410 | 0.930 | 1.350 | 2.710 | 0.100 | 0.614 | 0.564 |
| 2,3-Dimethylpentane | 58 | 0 | 0.110 | 0.170 | 0.270 | 0.480 | 0.810 | 2.010 | 0.080 | 0.377 | 0.323 |
| 2,4-Dimethylhexane | 58 | 0 | 0.050 | 0.080 | 0.130 | 0.270 | 0.470 | 1.010 | 0.050 | 0.197 | 0.179 |
| 2,4-Dimethylpentane | 58 | 1 | 0.060 | 0.100 | 0.170 | 0.300 | 0.550 | 1.390 | 0.050 | 0.238 | 0.228 |
| 2,5-Dimethylhexane | 58 | 8 | 0.050 | 0.060 | 0.100 | 0.200 | 0.330 | 0.830 | 0.050 | 0.151 | 0.141 |
| 2-Ethyl-1-butene | 58 | 38 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.290 | 0.050 | 0.067 | 0.040 |
| 2-Ethyltoluene | 58 | 1 | 0.070 | 0.100 | 0.160 | 0.300 | 0.400 | 1.190 | 0.050 | 0.212 | 0.176 |
| 2-methyl-1-butene | 58 | 0 | 0.120 | 0.180 | 0.260 | 0.460 | 0.790 | 2.070 | 0.080 | 0.389 | 0.379 |
| 2-Methyl-2-butene | 58 | 0 | 0.090 | 0.170 | 0.270 | 0.580 | 1.050 | 2.540 | 0.060 | 0.453 | 0.474 |
| 2-Methylheptane | 58 | 0 | 0.070 | 0.120 | 0.190 | 0.430 | 0.580 | 1.070 | 0.060 | 0.282 | 0.230 |
| 2-Methylhexane | 58 | 0 | 0.130 | 0.250 | 0.450 | 0.910 | 1.310 | 2.720 | 0.120 | 0.625 | 0.541 |
| 2-Methylpentane | 58 | 0 | 0.370 | 0.780 | 1.290 | 3.640 | 5.470 | 8.290 | 0.320 | 2.374 | 2.141 |
| 3,6-Dimethyloctane | 58 | 39 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.170 | 0.050 | 0.058 | 0.019 |
| 3-Ethyltoluene | 58 | 0 | 0.150 | 0.210 | 0.360 | 0.660 | 0.950 | 3.140 | 0.080 | 0.492 | 0.451 |
| 3-Methyl-1-pentene | 58 | 29 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.120 | 0.050 | 0.059 | 0.016 |
| 3-Methylheptane | 58 | 0 | 0.060 | 0.100 | 0.180 | 0.360 | 0.490 | 1.050 | 0.050 | 0.242 | 0.198 |
| 3-Methylhexane | 58 | 0 | 0.140 | 0.280 | 0.540 | 1.040 | 1.510 | 3.090 | 0.120 | 0.717 | 0.604 |
| 3-Methylpentane | 58 | 0 | 0.310 | 0.550 | 0.960 | 2.500 | 3.830 | 8.320 | 0.240 | 1.677 | 1.621 |
| 4-Ethyltoluene | 58 | 0 | 0.100 | 0.130 | 0.210 | 0.370 | 0.490 | 1.540 | 0.050 | 0.273 | 0.221 |
| 4-Methyl-1-pentene | 58 | 34 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.120 | 0.050 | 0.058 | 0.015 |
| 4-Methylheptane | 58 | 17 | 0.050 | 0.050 | 0.080 | 0.150 | 0.220 | 0.430 | 0.050 | 0.111 | 0.082 |
| Acetylene | 58 | 0 | 0.826 | 1.396 | 2.077 | 2.760 | 4.182 | 20.332 | 0.591 | 2.534 | 2.630 |
| Benzene | 58 | 0 | 0.450 | 0.670 | 1.180 | 2.240 | 3.120 | 5.560 | 0.300 | 1.599 | 1.222 |
| Bromodichloromethane | 58 | 3 | 0.050 | 0.080 | 0.090 | 0.120 | 0.150 | 0.220 | 0.050 | 0.100 | 0.037 |

## Table 49: VOC Annual Statistics at Sarnia (2000)

Unit: micrograms per cubic metre (µg/m³)

| | # of | | P E R C E N T I L E S | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Bromoform | 58 | 11 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.057 | 0.009 |
| Bromomethane | 58 | 0 | 0.110 | 0.130 | 0.140 | 0.160 | 0.180 | 0.220 | 0.090 | 0.147 | 0.025 |
| Butane | 58 | 0 | 0.920 | 2.660 | 4.040 | 10.620 | 16.430 | 28.160 | 0.590 | 6.858 | 6.399 |
| Carbontetrachloride | 58 | 0 | 0.300 | 0.610 | 0.660 | 0.700 | 0.780 | 0.900 | 0.270 | 0.646 | 0.124 |
| Chlorobenzene | 58 | 58 | | | | | | | | | |
| Chloroethane | 58 | 1 | 0.050 | 0.060 | 0.080 | 0.090 | 0.100 | 0.160 | 0.050 | 0.078 | 0.019 |
| Chloroform | 58 | 0 | 0.070 | 0.110 | 0.140 | 0.180 | 0.260 | 0.470 | 0.060 | 0.158 | 0.079 |
| Chloromethane | 58 | 0 | 1.020 | 1.190 | 1.470 | 2.980 | 5.740 | 12.170 | 0.850 | 2.511 | 2.232 |
| cis-1,2-Dichloroethylene | 58 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| cis-1,2-Dimethylcyclohexane | 58 | 35 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.130 | 0.050 | 0.059 | 0.016 |
| cis-1,3-Dichloropropene | 58 | 58 | | | | | | | | | |
| cis-1,3-Dimethylcyclohexane | 58 | 16 | 0.050 | 0.050 | 0.060 | 0.190 | 0.240 | 0.440 | 0.050 | 0.119 | 0.095 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 58 | 38 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.140 | 0.050 | 0.062 | 0.022 |
| cis-2-Butene | 58 | 0 | 0.050 | 0.080 | 0.180 | 0.390 | 0.700 | 1.180 | 0.050 | 0.289 | 0.291 |
| cis-2-Heptene | 58 | 11 | 0.050 | 0.050 | 0.070 | 0.110 | 0.160 | 0.200 | 0.050 | 0.089 | 0.042 |
| cis-2-Hexene | 58 | 30 | 0.050 | 0.050 | 0.050 | 0.080 | 0.120 | 0.300 | 0.050 | 0.071 | 0.043 |
| cis-2-Octene | 1 | 1 | | | | | | | | | |
| cis-2-Pentene | 58 | 0 | 0.060 | 0.100 | 0.140 | 0.260 | 0.460 | 0.900 | 0.050 | 0.206 | 0.169 |
| cis-3-Methyl-2-pentene | 58 | 23 | 0.050 | 0.050 | 0.060 | 0.100 | 0.140 | 0.410 | 0.050 | 0.085 | 0.064 |
| cis-4-Methyl-2-pentene | 58 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.260 | 0.050 | 0.057 | 0.030 |
| Cyclohexane | 58 | 0 | 0.060 | 0.140 | 0.470 | 2.040 | 7.110 | 13.810 | 0.060 | 1.827 | 2.893 |
| Cyclohexene | 58 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.053 | 0.008 |
| Cyclopentane | 58 | 0 | 0.080 | 0.180 | 0.310 | 0.900 | 1.340 | 2.540 | 0.070 | 0.549 | 0.552 |
| Cyclopentene | 58 | 24 | 0.050 | 0.050 | 0.050 | 0.080 | 0.090 | 0.200 | 0.050 | 0.067 | 0.031 |
| Decane | 58 | 1 | 0.100 | 0.140 | 0.220 | 0.630 | 0.760 | 1.620 | 0.050 | 0.372 | 0.308 |
| Dibromochloromethane | 58 | 8 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.090 | 0.050 | 0.062 | 0.013 |
| Dibromomethane | 58 | 1 | 0.050 | 0.080 | 0.090 | 0.100 | 0.130 | 0.150 | 0.050 | 0.096 | 0.021 |
| Dichloromethane | 58 | 0 | 0.240 | 0.310 | 0.430 | 0.640 | 1.040 | 3.190 | 0.190 | 0.581 | 0.484 |
| Dodecane | 58 | 2 | 0.060 | 0.100 | 0.190 | 0.370 | 0.430 | 0.780 | 0.050 | 0.229 | 0.168 |
| EDB | 58 | 7 | 0.050 | 0.050 | 0.060 | 0.060 | 0.080 | 0.090 | 0.050 | 0.059 | 0.012 |
| Ethane | 58 | 0 | 2.002 | 3.674 | 5.245 | 8.471 | 13.346 | 17.050 | 1.322 | 6.349 | 4.033 |

## Table 49: VOC Annual Statistics at Sarnia (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | 58 | 0 | 0.190 | 0.320 | 0.580 | 1.140 | 1.690 | 4.390 | 0.170 | 0.828 | 0.728 |
| Ethylbromide | 58 | 54 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| Ethylene | 58 | 0 | 0.783 | 1.340 | 2.813 | 7.353 | 12.399 | 47.519 | 0.548 | 5.747 | 7.570 |
| Freon11 | 58 | 0 | 1.510 | 1.630 | 1.720 | 1.850 | 2.000 | 2.130 | 1.440 | 1.753 | 0.161 |
| Freon114 | 58 | 0 | 0.170 | 0.210 | 0.220 | 0.250 | 0.260 | 0.290 | 0.160 | 0.225 | 0.031 |
| Freon12 | 58 | 0 | 2.440 | 2.890 | 3.160 | 3.490 | 3.920 | 5.570 | 2.100 | 3.241 | 0.591 |
| Freon22 | 58 | 0 | 0.500 | 0.590 | 0.650 | 0.770 | 0.840 | 0.910 | 0.380 | 0.673 | 0.119 |
| Heptane | 58 | 0 | 0.180 | 0.280 | 0.450 | 0.980 | 1.520 | 2.080 | 0.150 | 0.647 | 0.506 |
| Hexachlorobutadiene | 58 | 58 |  |  |  |  |  |  |  |  |  |
| Hexane | 58 | 0 | 0.350 | 0.700 | 1.050 | 3.070 | 5.120 | 15.390 | 0.280 | 2.178 | 2.544 |
| Hexylbenzene | 46 | 18 | 0.050 | 0.050 | 0.070 | 0.120 | 0.170 | 0.850 | 0.050 | 0.117 | 0.158 |
| Indane | 58 | 5 | 0.050 | 0.060 | 0.090 | 0.140 | 0.190 | 0.530 | 0.050 | 0.109 | 0.074 |
| Isobutane | 58 | 0 | 0.470 | 1.540 | 2.290 | 6.470 | 10.670 | 15.530 | 0.270 | 4.154 | 4.031 |
| iso-Butylbenzene | 58 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.050 | 0.052 | 0.007 |
| Isopentane | 58 | 0 | 1.100 | 2.280 | 3.940 | 9.970 | 17.060 | 26.380 | 0.920 | 6.729 | 6.283 |
| Isoprene | 58 | 5 | 0.050 | 0.080 | 0.150 | 0.380 | 0.660 | 1.210 | 0.050 | 0.251 | 0.242 |
| iso-Propylbenzene | 58 | 12 | 0.050 | 0.050 | 0.070 | 0.100 | 0.120 | 0.300 | 0.050 | 0.081 | 0.045 |
| m and p-Xylene | 58 | 0 | 0.440 | 0.890 | 1.400 | 2.920 | 4.530 | 11.630 | 0.400 | 2.101 | 1.857 |
| Methylcyclohexane | 58 | 0 | 0.090 | 0.160 | 0.240 | 0.730 | 1.050 | 1.800 | 0.080 | 0.447 | 0.410 |
| Methylcyclopentane | 58 | 0 | 0.140 | 0.310 | 0.550 | 1.390 | 2.190 | 4.920 | 0.120 | 0.886 | 0.910 |
| n-Butylbenzene | 58 | 16 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.260 | 0.050 | 0.069 | 0.035 |
| Nonane | 58 | 0 | 0.080 | 0.110 | 0.190 | 0.520 | 0.600 | 1.780 | 0.050 | 0.310 | 0.287 |
| n-Propylbenzene | 58 | 1 | 0.070 | 0.090 | 0.140 | 0.250 | 0.350 | 1.010 | 0.050 | 0.189 | 0.149 |
| Octane | 58 | 0 | 0.080 | 0.130 | 0.210 | 0.620 | 0.760 | 1.540 | 0.060 | 0.371 | 0.322 |
| o-Xylene | 58 | 0 | 0.160 | 0.310 | 0.500 | 1.000 | 1.280 | 3.850 | 0.140 | 0.694 | 0.582 |
| p-Cymene | 58 | 18 | 0.050 | 0.050 | 0.060 | 0.090 | 0.170 | 0.190 | 0.050 | 0.081 | 0.043 |
| Pentane | 58 | 0 | 0.680 | 1.280 | 2.150 | 5.030 | 8.550 | 13.790 | 0.560 | 3.552 | 3.302 |
| Propane | 58 | 0 | 1.550 | 3.510 | 5.780 | 12.590 | 24.480 | 35.180 | 0.810 | 9.144 | 8.310 |
| Propylene | 58 | 0 | 0.260 | 0.550 | 1.200 | 3.120 | 4.870 | 9.040 | 0.160 | 2.109 | 2.084 |
| sec-Butylbenzene | 58 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.110 | 0.050 | 0.055 | 0.013 |
| Styrene | 58 | 1 | 0.060 | 0.090 | 0.130 | 0.310 | 0.530 | 5.560 | 0.050 | 0.301 | 0.722 |

## Table 49: VOC Annual Statistics at Sarnia (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| tert-Butylbenzene | 58 | 58 | | | | | | | | | |
| Tetrachloroethylene | 58 | 0 | 0.110 | 0.170 | 0.230 | 0.410 | 0.770 | 3.100 | 0.090 | 0.374 | 0.461 |
| Toluene | 58 | 0 | 0.850 | 1.520 | 2.780 | 6.490 | 9.050 | 27.240 | 0.700 | 4.297 | 4.214 |
| trans-1,2-Dichloroethylene | 58 | 55 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,2-Dimethylcyclohexane | 58 | 28 | 0.050 | 0.050 | 0.050 | 0.150 | 0.180 | 0.380 | 0.050 | 0.095 | 0.068 |
| trans-1,3-Dichloropropene | 58 | 58 | | | | | | | | | |
| trans-1,4-Dimethylcyclohexane | 58 | 37 | 0.050 | 0.050 | 0.050 | 0.080 | 0.110 | 0.190 | 0.050 | 0.068 | 0.032 |
| trans-2-Butene | 58 | 1 | 0.050 | 0.090 | 0.190 | 0.370 | 0.790 | 1.580 | 0.050 | 0.316 | 0.331 |
| trans-2-Heptene | 58 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.130 | 0.050 | 0.053 | 0.011 |
| trans-2-Hexene | 58 | 26 | 0.050 | 0.050 | 0.050 | 0.100 | 0.150 | 0.350 | 0.050 | 0.080 | 0.054 |
| trans-2-Pentene | 58 | 2 | 0.050 | 0.100 | 0.160 | 0.390 | 0.660 | 1.360 | 0.050 | 0.259 | 0.254 |
| trans-3-Heptene | 58 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| trans-3-Methyl-2-pentene | 58 | 32 | 0.050 | 0.050 | 0.050 | 0.080 | 0.120 | 0.360 | 0.050 | 0.075 | 0.052 |
| trans-4-Methyl-2-pentene | 58 | 57 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Trichloroethylene | 58 | 0 | 0.060 | 0.100 | 0.130 | 0.160 | 0.240 | 0.380 | 0.050 | 0.143 | 0.073 |
| Undecane | 58 | 1 | 0.080 | 0.150 | 0.270 | 0.510 | 0.700 | 0.900 | 0.050 | 0.333 | 0.223 |
| Vinylchloride | 58 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.110 | 0.340 | 0.050 | 0.067 | 0.050 |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 50: VOC Annual Statistics at Simcoe (2000)

Unit: micrograms per cubic metre (μg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane |  | 0 | 0.280 | 0.310 | 0.350 | 0.380 | 0.420 | 0.560 | 0.280 | 0.356 | 0.061 |
| 1,1,2,2-Tetrachloroethane | 41 | 8 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.056 | 0.009 |
| 1,1,2-Trichloroethane | 41 | 26 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,1-Dichloroethane | 41 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,1-Dichloroethylene | 41 | 4 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.080 | 0.050 | 0.062 | 0.010 |
| 1,2,3-Trimethylbenzene | 41 | 7 | 0.050 | 0.050 | 0.070 | 0.080 | 0.110 | 0.190 | 0.050 | 0.076 | 0.033 |
| 1,2,4-Trichlorobenzene | 41 | 37 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.053 | 0.010 |
| 1,2,4-Trimethylbenzene | 41 | 0 | 0.120 | 0.150 | 0.230 | 0.280 | 0.410 | 1.050 | 0.110 | 0.260 | 0.166 |
| 1,2-Dichlorobenzene | 41 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.610 | 0.050 | 0.064 | 0.087 |
| 1,2-Dichloroethane | 41 | 2 | 0.050 | 0.070 | 0.070 | 0.080 | 0.090 | 0.110 | 0.050 | 0.074 | 0.015 |
| 1,2-Dichloropropane | 41 | 30 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,2-Diethylbenzene | 41 | 41 |  |  |  |  |  |  |  |  |  |
| 1,3,5-Trimethylbenzene | 41 | 5 | 0.050 | 0.060 | 0.080 | 0.090 | 0.120 | 0.440 | 0.050 | 0.090 | 0.064 |
| 1,3-Butadiene | 41 | 14 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.100 | 0.050 | 0.060 | 0.016 |
| 1,3-Dichlorobenzene | 41 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,3-Diethylbenzene | 41 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,4-Dichlorobenzene | 41 | 16 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.160 | 0.050 | 0.060 | 0.021 |
| 1,4-Dichlorobutane | 41 | 41 |  |  |  |  |  |  |  |  |  |
| 1,4-Diethylbenzene | 41 | 5 | 0.050 | 0.070 | 0.080 | 0.090 | 0.120 | 0.150 | 0.050 | 0.082 | 0.025 |
| 1-Butene/Isobutene | 41 | 0 | 0.170 | 0.240 | 0.300 | 0.350 | 0.420 | 1.130 | 0.150 | 0.320 | 0.153 |
| 1-Butyne | 41 | 41 |  |  |  |  |  |  |  |  |  |
| 1-Decene | 39 | 19 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.510 | 0.050 | 0.068 | 0.075 |
| 1-Heptene | 41 | 12 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.560 | 0.050 | 0.073 | 0.080 |
| 1-Hexene | 41 | 1 | 0.070 | 0.110 | 0.140 | 0.170 | 0.200 | 0.750 | 0.050 | 0.153 | 0.104 |
| 1-Methylcyclohexene | 41 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.050 | 0.052 | 0.007 |
| 1-Methylcyclopentene | 41 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.006 |
| 1-Nonene | 41 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.510 | 0.050 | 0.064 | 0.072 |
| 1-Octene | 41 | 29 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.520 | 0.050 | 0.064 | 0.074 |
| 1-Pentene | 41 | 2 | 0.050 | 0.070 | 0.080 | 0.090 | 0.110 | 0.590 | 0.050 | 0.093 | 0.083 |
| 1-Propyne | 41 | 31 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.070 | 0.050 | 0.053 | 0.007 |
| 2,2,3-Trimethylbutane | 41 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.130 | 0.050 | 0.052 | 0.012 |

## Table 50: VOC Annual Statistics at Simcoe (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| | # of | | PERCENTILES | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| 2,2,4-Trimethylpentane | 41 | 0 | 0.100 | 0.150 | 0.210 | 0.290 | 0.370 | 0.440 | 0.080 | 0.226 | 0.097 |
| 2,2,5-Trimethylhexane | 41 | 41 | | | | | | | | | |
| 2,2-Dimethylbutane | 41 | 1 | 0.060 | 0.080 | 0.120 | 0.130 | 0.150 | 0.170 | 0.050 | 0.109 | 0.034 |
| 2,2-Dimethylhexane | 41 | 41 | | | | | | | | | |
| 2,2-Dimethylpentane | 41 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 2,2-Dimethylpropane | 41 | 23 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.053 | 0.007 |
| 2,3,4-Trimethylpentane | 41 | 6 | 0.050 | 0.050 | 0.080 | 0.110 | 0.140 | 0.170 | 0.050 | 0.084 | 0.035 |
| 2,3-Dimethylbutane | 41 | 1 | 0.050 | 0.090 | 0.110 | 0.160 | 0.190 | 0.320 | 0.050 | 0.125 | 0.059 |
| 2,3-Dimethylpentane | 41 | 2 | 0.050 | 0.080 | 0.100 | 0.130 | 0.160 | 0.250 | 0.050 | 0.107 | 0.044 |
| 2,4-Dimethylhexane | 41 | 11 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.110 | 0.050 | 0.062 | 0.017 |
| 2,4-Dimethylpentane | 41 | 12 | 0.050 | 0.050 | 0.060 | 0.080 | 0.100 | 0.130 | 0.050 | 0.069 | 0.022 |
| 2,5-Dimethylbenzaldehyde | 33 | 33 | | | | | | | | | |
| 2,5-Dimethylhexane | 41 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.053 | 0.007 |
| 2-Ethyl-1-butene | 41 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 2-Ethyltoluene | 41 | 5 | 0.050 | 0.050 | 0.080 | 0.090 | 0.130 | 0.280 | 0.050 | 0.083 | 0.042 |
| 2-methyl-1-butene | 41 | 9 | 0.050 | 0.050 | 0.070 | 0.090 | 0.110 | 0.150 | 0.050 | 0.078 | 0.027 |
| 2-Methyl-2-butene | 41 | 2 | 0.050 | 0.060 | 0.070 | 0.090 | 0.130 | 0.200 | 0.050 | 0.084 | 0.037 |
| 2-Methylheptane | 41 | 6 | 0.050 | 0.060 | 0.080 | 0.100 | 0.130 | 0.160 | 0.050 | 0.086 | 0.031 |
| 2-Methylhexane | 41 | 0 | 0.080 | 0.100 | 0.120 | 0.190 | 0.260 | 0.490 | 0.070 | 0.154 | 0.083 |
| 2-Methylpentane | 41 | 0 | 0.170 | 0.300 | 0.410 | 0.640 | 0.730 | 0.990 | 0.160 | 0.452 | 0.218 |
| 3,6-Dimethyloctane | 41 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 3-Ethyltoluene | 41 | 0 | 0.070 | 0.100 | 0.140 | 0.180 | 0.270 | 0.780 | 0.060 | 0.167 | 0.119 |
| 3-Methyl-1-pentene | 41 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 3-Methylheptane | 41 | 11 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.130 | 0.050 | 0.067 | 0.021 |
| 3-Methylhexane | 41 | 0 | 0.070 | 0.120 | 0.150 | 0.210 | 0.270 | 0.630 | 0.070 | 0.177 | 0.104 |
| 3-Methylpentane | 41 | 0 | 0.140 | 0.190 | 0.270 | 0.370 | 0.510 | 0.590 | 0.120 | 0.299 | 0.131 |
| 4-Ethyltoluene | 41 | 2 | 0.060 | 0.080 | 0.110 | 0.130 | 0.170 | 0.440 | 0.050 | 0.116 | 0.066 |
| 4-Methyl-1-pentene | 41 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.150 | 0.050 | 0.053 | 0.016 |
| 4-Methylheptane | 41 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| Acetaldehyde | 33 | 0 | 0.516 | 0.660 | 1.072 | 2.058 | 4.882 | 8.393 | 0.502 | 1.984 | 2.167 |
| Acetone | 33 | 0 | 1.225 | 1.895 | 2.536 | 3.617 | 15.345 | 24.967 | 0.803 | 4.810 | 5.797 |

## Table 50: VOC Annual Statistics at Simcoe (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetylene | 41 | 0 | 0.445 | 0.592 | 1.010 | 1.419 | 1.839 | 2.086 | 0.288 | 1.073 | 0.519 |
| Acrolein | 33 | 21 | 0.050 | 0.050 | 0.050 | 0.063 | 0.096 | 0.179 | 0.050 | 0.062 | 0.027 |
| Benzaldehyde | 33 | 5 | 0.050 | 0.060 | 0.081 | 0.185 | 0.540 | 1.151 | 0.050 | 0.190 | 0.255 |
| Benzene | 41 | 0 | 0.260 | 0.360 | 0.560 | 0.760 | 0.940 | 1.100 | 0.220 | 0.585 | 0.254 |
| Bromodichloromethane | 41 | 4 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.140 | 0.050 | 0.065 | 0.016 |
| Bromoform | 41 | 8 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.057 | 0.010 |
| Bromomethane | 41 | 0 | 0.090 | 0.130 | 0.140 | 0.160 | 0.200 | 2.060 | 0.060 | 0.196 | 0.302 |
| Butane | 41 | 0 | 0.430 | 0.690 | 1.660 | 2.650 | 3.550 | 4.730 | 0.370 | 1.822 | 1.126 |
| Carbontetrachloride | 41 | 0 | 0.590 | 0.680 | 0.710 | 0.740 | 0.790 | 0.870 | 0.470 | 0.707 | 0.086 |
| Chlorobenzene | 41 | 21 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| Chloroethane | 41 | 5 | 0.050 | 0.060 | 0.070 | 0.080 | 0.080 | 0.310 | 0.050 | 0.073 | 0.040 |
| Chloroform | 41 | 0 | 0.090 | 0.100 | 0.110 | 0.120 | 0.130 | 0.150 | 0.080 | 0.111 | 0.015 |
| Chloromethane | 41 | 0 | 0.980 | 1.110 | 1.190 | 1.230 | 1.320 | 1.480 | 0.900 | 1.179 | 0.128 |
| cis-1,2-Dichloroethylene | 41 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| cis-1,2-Dimethylcyclohexane | 41 | 41 | | | | | | | | | |
| cis-1,3-Dichloropropene | 41 | 30 | 0.050 | 0.050 | 0.050 | 0.070 | 0.350 | 8.970 | 0.050 | 0.322 | 1.390 |
| cis-1,3-Dimethylcyclohexane | 41 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.053 | 0.007 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 41 | 41 | | | | | | | | | |
| cis-2-Butene | 41 | 15 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.100 | 0.050 | 0.060 | 0.015 |
| cis-2-Heptene | 41 | 25 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.007 |
| cis-2-Hexene | 41 | 41 | | | | | | | | | |
| cis-2-Pentene | 41 | 7 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.110 | 0.050 | 0.066 | 0.014 |
| cis-3-Methyl-2-pentene | 41 | 41 | | | | | | | | | |
| cis-4-Methyl-2-pentene | 41 | 41 | | | | | | | | | |
| Crotonaldehyde | 33 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.085 | 0.208 | 0.050 | 0.061 | 0.034 |
| Cyclohexane | 41 | 9 | 0.050 | 0.050 | 0.080 | 0.130 | 0.180 | 0.450 | 0.050 | 0.113 | 0.089 |
| Cyclohexene | 41 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.007 |
| Cyclopentane | 41 | 4 | 0.050 | 0.070 | 0.090 | 0.130 | 0.150 | 0.170 | 0.050 | 0.098 | 0.037 |
| Cyclopentene | 41 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.050 | 0.003 |
| Decane | 41 | 0 | 0.080 | 0.100 | 0.150 | 0.200 | 0.280 | 0.610 | 0.060 | 0.179 | 0.107 |
| Dibromochloromethane | 41 | 5 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.057 | 0.010 |

## Table 50: VOC Annual Statistics at Simcoe (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | 5% | PERCENTILES 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dibromomethane | 41 | 3 | 0.050 | 0.090 | 0.100 | 0.110 | 0.120 | 0.140 | 0.050 | 0.098 | 0.020 |
| Dichloromethane | 41 | 0 | 0.200 | 0.250 | 0.300 | 0.380 | 0.690 | 1.730 | 0.180 | 0.399 | 0.323 |
| Dodecane | 41 | 0 | 0.050 | 0.080 | 0.110 | 0.140 | 0.170 | 0.350 | 0.050 | 0.116 | 0.057 |
| EDB | 41 | 9 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.056 | 0.008 |
| Ethane | 41 | 0 | 1.171 | 1.856 | 2.927 | 3.561 | 4.606 | 6.997 | 1.081 | 3.000 | 1.423 |
| Ethylbenzene | 41 | 0 | 0.120 | 0.170 | 0.220 | 0.300 | 0.490 | 0.830 | 0.100 | 0.275 | 0.161 |
| Ethylbromide | 41 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 41 | 0 | 0.326 | 0.468 | 0.678 | 1.062 | 1.455 | 5.072 | 0.301 | 0.898 | 0.800 |
| Formaldehyde | 33 | 0 | 0.592 | 1.042 | 1.545 | 4.007 | 8.590 | 16.657 | 0.564 | 3.402 | 4.051 |
| Freon11 | 41 | 0 | 1.550 | 1.710 | 1.780 | 1.910 | 2.030 | 2.450 | 1.470 | 1.820 | 0.206 |
| Freon114 | 41 | 0 | 0.150 | 0.210 | 0.220 | 0.250 | 0.270 | 0.300 | 0.120 | 0.224 | 0.039 |
| Freon12 | 41 | 0 | 2.410 | 2.680 | 2.760 | 2.880 | 3.090 | 4.180 | 2.220 | 2.837 | 0.344 |
| Freon22 | 41 | 0 | 0.520 | 0.580 | 0.630 | 0.690 | 0.810 | 1.280 | 0.450 | 0.677 | 0.173 |
| Heptane | 41 | 0 | 0.090 | 0.150 | 0.190 | 0.240 | 0.300 | 0.630 | 0.070 | 0.209 | 0.107 |
| Hexachlorobutadiene | 41 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Hexanal | 33 | 7 | 0.050 | 0.056 | 0.115 | 0.197 | 0.637 | 0.885 | 0.050 | 0.207 | 0.244 |
| Hexane | 41 | 0 | 0.160 | 0.250 | 0.360 | 0.480 | 0.650 | 1.360 | 0.130 | 0.401 | 0.221 |
| Hexylbenzene | 32 | 16 | 0.050 | 0.050 | 0.060 | 0.100 | 0.110 | 0.730 | 0.050 | 0.109 | 0.163 |
| Indane | 41 | 21 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.056 | 0.010 |
| Isobutane | 41 | 0 | 0.230 | 0.330 | 0.720 | 1.110 | 1.480 | 1.900 | 0.170 | 0.811 | 0.483 |
| iso-Butylbenzene | 41 | 41 | | | | | | | | | |
| Isopentane | 41 | 0 | 0.570 | 0.810 | 1.120 | 1.800 | 2.070 | 3.530 | 0.470 | 1.310 | 0.644 |
| Isoprene | 41 | 12 | 0.050 | 0.050 | 0.060 | 0.240 | 0.450 | 0.820 | 0.050 | 0.186 | 0.227 |
| iso-Propylbenzene | 41 | 30 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.052 | 0.006 |
| m and p-Xylene | 41 | 0 | 0.270 | 0.380 | 0.540 | 0.750 | 1.110 | 2.300 | 0.220 | 0.657 | 0.427 |
| MEK | 33 | 0 | 0.336 | 0.520 | 0.652 | 1.075 | 2.430 | 5.314 | 0.236 | 1.182 | 1.258 |
| Methylcyclohexane | 41 | 4 | 0.050 | 0.060 | 0.090 | 0.130 | 0.180 | 0.260 | 0.050 | 0.107 | 0.054 |
| Methylcyclopentane | 41 | 0 | 0.070 | 0.120 | 0.150 | 0.220 | 0.290 | 0.440 | 0.070 | 0.175 | 0.083 |
| MIBK | 33 | 26 | 0.050 | 0.050 | 0.050 | 0.050 | 0.108 | 0.838 | 0.050 | 0.095 | 0.159 |
| m-Tolualdehyde | 33 | 33 | | | | | | | | | |
| n-Butylbenzene | 41 | 37 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |

## Table 50: VOC Annual Statistics at Simcoe (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nonane | 41 | 3 | 0.050 | 0.070 | 0.090 | 0.130 | 0.180 | 0.430 | 0.050 | 0.110 | 0.071 |
| n-Propylbenzene | 41 | 5 | 0.050 | 0.060 | 0.070 | 0.090 | 0.120 | 0.240 | 0.050 | 0.081 | 0.038 |
| Octane | 41 | 4 | 0.050 | 0.070 | 0.100 | 0.130 | 0.150 | 0.280 | 0.050 | 0.108 | 0.048 |
| o-Tolualdehyde | 33 | 33 | | | | | | | | | |
| o-Xylene | 41 | 0 | 0.110 | 0.140 | 0.210 | 0.290 | 0.410 | 0.670 | 0.080 | 0.238 | 0.131 |
| p-Cymene | 41 | 16 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.230 | 0.050 | 0.067 | 0.035 |
| Pentane | 41 | 0 | 0.350 | 0.560 | 0.670 | 1.040 | 1.190 | 1.310 | 0.290 | 0.764 | 0.295 |
| Propane | 41 | 0 | 0.660 | 1.120 | 2.000 | 3.280 | 4.310 | 5.500 | 0.620 | 2.301 | 1.311 |
| Propionaldehyde | 33 | 0 | 0.127 | 0.167 | 0.259 | 0.488 | 1.309 | 1.712 | 0.116 | 0.458 | 0.458 |
| Propylene | 41 | 0 | 0.140 | 0.180 | 0.230 | 0.350 | 0.530 | 2.220 | 0.130 | 0.334 | 0.338 |
| p-Tolualdehyde | 33 | 33 | | | | | | | | | |
| sec-Butylbenzene | 41 | 41 | | | | | | | | | |
| Styrene | 41 | 10 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.340 | 0.050 | 0.071 | 0.048 |
| tert-Butylbenzene | 41 | 41 | | | | | | | | | |
| Tetrachloroethylene | 41 | 1 | 0.080 | 0.120 | 0.150 | 0.180 | 0.190 | 0.530 | 0.050 | 0.166 | 0.091 |
| Toluene | 40 | 0 | 0.610 | 0.760 | 0.980 | 1.700 | 2.030 | 10.510 | 0.470 | 1.546 | 1.889 |
| trans-1,2-Dichloroethylene | 41 | 41 | | | | | | | | | |
| trans-1,2-Dimethylcyclohexane | 41 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,3-Dichloropropene | 41 | 30 | 0.050 | 0.050 | 0.050 | 0.070 | 0.280 | 7.780 | 0.050 | 0.285 | 1.205 |
| trans-1,4-Dimethylcyclohexane | 41 | 41 | | | | | | | | | |
| trans-2-Butene | 41 | 15 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.110 | 0.050 | 0.060 | 0.017 |
| trans-2-Heptene | 41 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| trans-2-Hexene | 41 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-2-Pentene | 41 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.050 | 0.056 | 0.013 |
| trans-3-Heptene | 41 | 41 | | | | | | | | | |
| trans-3-Methyl-2-pentene | 41 | 41 | | | | | | | | | |
| trans-4-Methyl-2-pentene | 41 | 41 | | | | | | | | | |
| Trichloroethylene | 41 | 3 | 0.050 | 0.080 | 0.090 | 0.110 | 0.130 | 0.180 | 0.050 | 0.095 | 0.032 |
| Undecane | 41 | 0 | 0.090 | 0.110 | 0.150 | 0.190 | 0.240 | 0.490 | 0.080 | 0.164 | 0.076 |

## Table 50: VOC Annual Statistics at Simcoe (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

|  | # of |  | PERCENTILES |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Valeraldehyde | 33 | 9 | 0.050 | 0.050 | 0.086 | 0.163 | 0.536 | 0.925 | 0.050 | 0.174 | 0.221 |
| Vinylchloride | 41 | 40 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 51: VOC Annual Statistics at Stouffville (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1-Trichloroethane | | 0 | 0.270 | 0.330 | 0.360 | 0.390 | 0.440 | 0.530 | 0.220 | 0.365 | 0.056 |
| 1,1,2,2-Tetrachloroethane | 54 | 9 | 0.050 | 0.050 | 0.060 | 0.060 | 0.080 | 0.090 | 0.050 | 0.059 | 0.011 |
| 1,1,2-Trichloroethane | 54 | 25 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.051 | 0.004 |
| 1,1-Dichloroethane | 54 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,1-Dichloroethylene | 54 | 3 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.050 | 0.065 | 0.013 |
| 1,2,3-Trimethylbenzene | 54 | 1 | 0.050 | 0.070 | 0.080 | 0.130 | 0.170 | 0.400 | 0.050 | 0.114 | 0.082 |
| 1,2,4-Trichlorobenzene | 54 | 54 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 54 | 0 | 0.160 | 0.210 | 0.290 | 0.480 | 0.670 | 1.560 | 0.150 | 0.402 | 0.326 |
| 1,2-Dichlorobenzene | 54 | 52 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| 1,2-Dichloroethane | 54 | 2 | 0.050 | 0.060 | 0.080 | 0.090 | 0.100 | 0.110 | 0.050 | 0.076 | 0.017 |
| 1,2-Dichloropropane | 54 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,2-Diethylbenzene | 54 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,3,5-Trimethylbenzene | 54 | 0 | 0.050 | 0.070 | 0.090 | 0.150 | 0.210 | 0.500 | 0.050 | 0.131 | 0.102 |
| 1,3-Butadiene | 54 | 3 | 0.050 | 0.060 | 0.070 | 0.100 | 0.190 | 0.250 | 0.050 | 0.091 | 0.053 |
| 1,3-Dichlorobenzene | 54 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| 1,3-Diethylbenzene | 54 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.050 | 0.055 | 0.013 |
| 1,4-Dichlorobenzene | 54 | 3 | 0.050 | 0.060 | 0.070 | 0.110 | 0.140 | 0.240 | 0.050 | 0.085 | 0.040 |
| 1,4-Dichlorobutane | 54 | 54 | | | | | | | | | |
| 1,4-Diethylbenzene | 54 | 2 | 0.050 | 0.070 | 0.100 | 0.120 | 0.180 | 0.330 | 0.050 | 0.111 | 0.062 |
| 1-Butene/Isobutene | 54 | 0 | 0.220 | 0.330 | 0.450 | 0.640 | 1.130 | 3.220 | 0.180 | 0.646 | 0.602 |
| 1-Butyne | 54 | 54 | | | | | | | | | |
| 1-Decene | 54 | 9 | 0.050 | 0.050 | 0.070 | 0.080 | 0.110 | 0.600 | 0.050 | 0.083 | 0.077 |
| 1-Heptene | 54 | 3 | 0.050 | 0.070 | 0.080 | 0.150 | 0.220 | 0.650 | 0.050 | 0.120 | 0.099 |
| 1-Hexene | 54 | 0 | 0.100 | 0.140 | 0.160 | 0.210 | 0.290 | 0.850 | 0.060 | 0.193 | 0.112 |
| 1-Methylcyclohexene | 54 | 23 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.050 | 0.055 | 0.010 |
| 1-Methylcyclopentene | 54 | 28 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.240 | 0.050 | 0.062 | 0.032 |
| 1-Nonene | 54 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.560 | 0.050 | 0.063 | 0.070 |
| 1-Octene | 54 | 30 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.610 | 0.050 | 0.062 | 0.076 |
| 1-Pentene | 54 | 0 | 0.060 | 0.080 | 0.100 | 0.140 | 0.270 | 1.100 | 0.060 | 0.160 | 0.174 |
| 1-Propyne | 54 | 29 | 0.050 | 0.050 | 0.050 | 0.060 | 0.110 | 0.150 | 0.050 | 0.063 | 0.027 |
| 2,2,3-Trimethylbutane | 54 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.160 | 0.050 | 0.052 | 0.015 |

## Table 51: VOC Annual Statistics at Stouffville (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 54 | 0 | 0.170 | 0.200 | 0.300 | 0.590 | 1.040 | 1.490 | 0.110 | 0.445 | 0.334 |
| 2,2,5-Trimethylhexane | 54 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.052 | 0.006 |
| 2,2-Dimethylbutane | 54 | 0 | 0.070 | 0.100 | 0.130 | 0.170 | 0.320 | 0.820 | 0.050 | 0.165 | 0.129 |
| 2,2-Dimethylhexane | 54 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.001 |
| 2,2-Dimethylpentane | 54 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.180 | 0.050 | 0.060 | 0.025 |
| 2,2-Dimethylpropane | 54 | 24 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.160 | 0.050 | 0.061 | 0.025 |
| 2,3,4-Trimethylpentane | 54 | 1 | 0.060 | 0.070 | 0.100 | 0.200 | 0.290 | 0.460 | 0.050 | 0.142 | 0.094 |
| 2,3-Dimethylbutane | 54 | 0 | 0.090 | 0.120 | 0.160 | 0.290 | 0.650 | 2.210 | 0.080 | 0.303 | 0.397 |
| 2,3-Dimethylpentane | 54 | 0 | 0.080 | 0.110 | 0.140 | 0.230 | 0.400 | 0.910 | 0.060 | 0.197 | 0.157 |
| 2,4-Dimethylhexane | 54 | 4 | 0.050 | 0.060 | 0.080 | 0.140 | 0.200 | 0.240 | 0.050 | 0.106 | 0.058 |
| 2,4-Dimethylpentane | 54 | 3 | 0.050 | 0.060 | 0.070 | 0.130 | 0.230 | 0.640 | 0.050 | 0.114 | 0.108 |
| 2,5-Dimethylhexane | 54 | 16 | 0.050 | 0.050 | 0.060 | 0.100 | 0.150 | 0.220 | 0.050 | 0.082 | 0.044 |
| 2-Ethyl-1-butene | 54 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.230 | 0.050 | 0.056 | 0.028 |
| 2-Ethyltoluene | 54 | 0 | 0.050 | 0.070 | 0.090 | 0.140 | 0.200 | 0.450 | 0.050 | 0.120 | 0.089 |
| 2-methyl-1-butene | 54 | 0 | 0.060 | 0.100 | 0.120 | 0.220 | 0.410 | 2.420 | 0.050 | 0.224 | 0.343 |
| 2-Methyl-2-butene | 54 | 0 | 0.070 | 0.100 | 0.130 | 0.290 | 0.530 | 4.120 | 0.060 | 0.328 | 0.630 |
| 2-Methylheptane | 54 | 0 | 0.060 | 0.090 | 0.120 | 0.200 | 0.330 | 0.550 | 0.050 | 0.165 | 0.112 |
| 2-Methylhexane | 54 | 0 | 0.120 | 0.170 | 0.220 | 0.410 | 0.820 | 1.150 | 0.110 | 0.334 | 0.263 |
| 2-Methylpentane | 54 | 0 | 0.260 | 0.440 | 0.600 | 1.120 | 2.150 | 6.560 | 0.230 | 1.041 | 1.212 |
| 3,6-Dimethyloctane | 54 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.050 | 0.051 | 0.005 |
| 3-Ethyltoluene | 54 | 0 | 0.100 | 0.140 | 0.190 | 0.290 | 0.430 | 1.070 | 0.090 | 0.258 | 0.216 |
| 3-Methyl-1-pentene | 54 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.160 | 0.050 | 0.055 | 0.016 |
| 3-Methylheptane | 54 | 0 | 0.050 | 0.070 | 0.090 | 0.180 | 0.230 | 0.450 | 0.050 | 0.132 | 0.095 |
| 3-Methylhexane | 54 | 0 | 0.150 | 0.200 | 0.270 | 0.500 | 0.990 | 1.350 | 0.110 | 0.405 | 0.317 |
| 3-Methylpentane | 54 | 0 | 0.190 | 0.290 | 0.370 | 0.670 | 1.560 | 4.170 | 0.180 | 0.650 | 0.743 |
| 4-Ethyltoluene | 54 | 0 | 0.070 | 0.100 | 0.130 | 0.190 | 0.250 | 0.540 | 0.060 | 0.160 | 0.106 |
| 4-Methyl-1-pentene | 54 | 36 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.140 | 0.050 | 0.056 | 0.017 |
| 4-Methylheptane | 54 | 30 | 0.050 | 0.050 | 0.050 | 0.080 | 0.120 | 0.200 | 0.050 | 0.071 | 0.038 |
| Acetylene | 54 | 0 | 0.521 | 0.727 | 1.261 | 1.859 | 3.136 | 4.075 | 0.458 | 1.536 | 1.000 |
| Benzene | 54 | 0 | 0.290 | 0.460 | 0.640 | 0.840 | 1.480 | 2.520 | 0.270 | 0.780 | 0.503 |
| Bromodichloromethane | 54 | 3 | 0.050 | 0.060 | 0.070 | 0.100 | 0.120 | 0.180 | 0.050 | 0.082 | 0.027 |

## Table 51: VOC Annual Statistics at Stouffville (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 54 | 10 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.090 | 0.050 | 0.059 | 0.010 |
| Bromomethane | 54 | 0 | 0.110 | 0.140 | 0.150 | 0.170 | 0.180 | 0.200 | 0.070 | 0.151 | 0.026 |
| Butane | 54 | 0 | 0.500 | 1.140 | 1.960 | 3.590 | 11.190 | 71.820 | 0.420 | 5.368 | 10.943 |
| Carbontetrachloride | 54 | 0 | 0.600 | 0.660 | 0.690 | 0.750 | 0.830 | 0.910 | 0.490 | 0.707 | 0.080 |
| Chlorobenzene | 54 | 54 | | | | | | | | | |
| Chloroethane | 54 | 2 | 0.060 | 0.070 | 0.090 | 0.110 | 0.130 | 0.180 | 0.050 | 0.092 | 0.028 |
| Chloroform | 54 | 0 | 0.080 | 0.100 | 0.110 | 0.130 | 0.150 | 0.190 | 0.070 | 0.117 | 0.024 |
| Chloromethane | 54 | 0 | 0.910 | 1.120 | 1.180 | 1.250 | 1.360 | 1.620 | 0.890 | 1.183 | 0.141 |
| cis-1,2-Dichloroethylene | 54 | 46 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 54 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.270 | 0.050 | 0.065 | 0.043 |
| cis-1,3-Dichloropropene | 54 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.100 | 0.050 | 0.051 | 0.007 |
| cis-1,3-Dimethylcyclohexane | 54 | 20 | 0.050 | 0.050 | 0.060 | 0.080 | 0.160 | 0.360 | 0.050 | 0.087 | 0.070 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 54 | 49 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.120 | 0.050 | 0.054 | 0.014 |
| cis-2-Butene | 54 | 3 | 0.050 | 0.060 | 0.080 | 0.150 | 0.350 | 2.030 | 0.050 | 0.200 | 0.349 |
| cis-2-Heptene | 54 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.080 | 0.050 | 0.052 | 0.006 |
| cis-2-Hexene | 54 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.230 | 0.050 | 0.057 | 0.027 |
| cis-2-Pentene | 54 | 2 | 0.050 | 0.070 | 0.090 | 0.140 | 0.250 | 1.470 | 0.050 | 0.151 | 0.217 |
| cis-3-Methyl-2-pentene | 54 | 39 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.300 | 0.050 | 0.061 | 0.039 |
| cis-4-Methyl-2-pentene | 54 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.210 | 0.050 | 0.053 | 0.022 |
| Cyclohexane | 54 | 2 | 0.060 | 0.080 | 0.100 | 0.200 | 0.380 | 1.740 | 0.050 | 0.183 | 0.249 |
| Cyclohexene | 54 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.120 | 0.050 | 0.052 | 0.010 |
| Cyclopentane | 54 | 0 | 0.070 | 0.110 | 0.140 | 0.250 | 0.540 | 1.530 | 0.060 | 0.251 | 0.308 |
| Cyclopentene | 54 | 35 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.210 | 0.050 | 0.060 | 0.029 |
| Decane | 54 | 0 | 0.080 | 0.100 | 0.190 | 0.300 | 0.470 | 0.930 | 0.070 | 0.244 | 0.189 |
| Dibromochloromethane | 54 | 7 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.090 | 0.050 | 0.061 | 0.011 |
| Dibromomethane | 54 | 2 | 0.070 | 0.090 | 0.100 | 0.120 | 0.120 | 0.150 | 0.050 | 0.101 | 0.020 |
| Dichloromethane | 54 | 0 | 0.190 | 0.290 | 0.390 | 0.620 | 1.590 | 2.890 | 0.180 | 0.610 | 0.603 |
| Dodecane | 54 | 3 | 0.050 | 0.070 | 0.110 | 0.170 | 0.240 | 0.420 | 0.050 | 0.131 | 0.080 |
| EDB | 54 | 4 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.080 | 0.050 | 0.058 | 0.010 |
| Ethane | 54 | 0 | 1.079 | 1.598 | 2.616 | 3.673 | 5.656 | 7.750 | 0.342 | 2.889 | 1.611 |
| Ethylbenzene | 54 | 0 | 0.170 | 0.240 | 0.350 | 0.660 | 0.930 | 2.430 | 0.120 | 0.526 | 0.503 |

## Table 51: VOC Annual Statistics at Stouffville (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylbromide | 54 | 51 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 54 | 0 | 0.529 | 0.616 | 0.964 | 1.414 | 2.824 | 7.082 | 0.366 | 1.362 | 1.196 |
| Freon11 | 54 | 0 | 1.580 | 1.660 | 1.780 | 1.950 | 2.090 | 2.210 | 1.260 | 1.810 | 0.187 |
| Freon114 | 54 | 0 | 0.170 | 0.220 | 0.230 | 0.260 | 0.280 | 0.300 | 0.110 | 0.234 | 0.037 |
| Freon12 | 54 | 0 | 2.490 | 2.620 | 2.790 | 2.990 | 3.120 | 3.340 | 2.310 | 2.814 | 0.238 |
| Freon22 | 54 | 0 | 0.500 | 0.590 | 0.650 | 0.690 | 0.870 | 1.050 | 0.470 | 0.666 | 0.122 |
| Heptane | 54 | 0 | 0.150 | 0.230 | 0.350 | 0.530 | 0.990 | 1.800 | 0.120 | 0.461 | 0.340 |
| Hexachlorobutadiene | 54 | 54 | | | | | | | | | |
| Hexane | 54 | 0 | 0.210 | 0.320 | 0.430 | 0.830 | 1.500 | 3.990 | 0.200 | 0.704 | 0.715 |
| Hexylbenzene | 38 | 19 | 0.050 | 0.050 | 0.050 | 0.090 | 0.730 | 0.790 | 0.050 | 0.138 | 0.218 |
| Indane | 54 | 12 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.200 | 0.050 | 0.069 | 0.034 |
| Isobutane | 54 | 0 | 0.240 | 0.470 | 0.900 | 1.420 | 3.920 | 35.700 | 0.190 | 2.139 | 4.971 |
| iso-Butylbenzene | 54 | 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| Isopentane | 54 | 0 | 0.710 | 1.210 | 1.570 | 2.650 | 6.080 | 36.770 | 0.600 | 3.567 | 6.255 |
| Isoprene | 54 | 6 | 0.050 | 0.060 | 0.110 | 0.230 | 0.340 | 0.580 | 0.050 | 0.162 | 0.138 |
| iso-Propylbenzene | 54 | 20 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.140 | 0.050 | 0.060 | 0.020 |
| m and p-Xylene | 54 | 0 | 0.380 | 0.610 | 0.920 | 1.690 | 2.620 | 7.080 | 0.320 | 1.474 | 1.519 |
| Methylcyclohexane | 54 | 0 | 0.080 | 0.130 | 0.220 | 0.400 | 0.860 | 3.600 | 0.050 | 0.425 | 0.592 |
| Methylcyclopentane | 54 | 0 | 0.120 | 0.180 | 0.220 | 0.390 | 0.730 | 1.860 | 0.100 | 0.363 | 0.378 |
| n-Butylbenzene | 54 | 38 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.100 | 0.050 | 0.054 | 0.011 |
| Nonane | 54 | 0 | 0.060 | 0.080 | 0.130 | 0.230 | 0.320 | 0.500 | 0.050 | 0.169 | 0.113 |
| n-Propylbenzene | 54 | 1 | 0.050 | 0.070 | 0.090 | 0.130 | 0.180 | 0.390 | 0.050 | 0.112 | 0.075 |
| Octane | 54 | 0 | 0.070 | 0.090 | 0.130 | 0.190 | 0.350 | 0.740 | 0.060 | 0.175 | 0.140 |
| o-Xylene | 54 | 0 | 0.140 | 0.200 | 0.310 | 0.540 | 0.780 | 1 960 | 0.120 | 0.446 | 0.407 |
| p-Cymene | 54 | 17 | 0.050 | 0.050 | 0.070 | 0.090 | 0.120 | 0.480 | 0.050 | 0.083 | 0.062 |
| Pentane | 54 | 0 | 0.510 | 0.760 | 1.030 | 1.710 | 3.570 | 14.410 | 0.400 | 1.941 | 2.685 |
| Propane | 54 | 0 | 0.830 | 1.590 | 2.320 | 3.460 | 6.090 | 22.170 | 0.600 | 3.222 | 3.257 |
| Propylene | 54 | 0 | 0.190 | 0.270 | 0.340 | 0.530 | 1.050 | 3.180 | 0.170 | 0.508 | 0.488 |
| sec-Butylbenzene | 54 | 48 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| Styrene | 54 | 6 | 0.050 | 0.060 | 0.090 | 0.160 | 0.230 | 0.550 | 0.050 | 0.129 | 0.119 |
| tert-Butylbenzene | 54 | 54 | | | | | | | | | |

## Table 51: VOC Annual Statistics at Stouffville (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | P E R C E N T I L E S |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Tetrachloroethylene | 54 | 0 | 0.140 | 0.180 | 0.260 | 0.400 | 0.630 | 2.090 | 0.080 | 0.353 | 0.318 |
| Toluene | 54 | 0 | 0.930 | 1.400 | 1.800 | 3.050 | 5.480 | 10.250 | 0.740 | 2.724 | 2.320 |
| trans-1,2-Dichloroethylene | 54 | 50 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,2-Dimethylcyclohexane | 54 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.240 | 0.050 | 0.065 | 0.040 |
| trans-1,3-Dichloropropene | 54 | 53 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.050 | 0.051 | 0.005 |
| trans-1,4-Dimethylcyclohexane | 54 | 43 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.130 | 0.050 | 0.055 | 0.016 |
| trans-2-Butene | 54 | 3 | 0.050 | 0.070 | 0.090 | 0.170 | 0.390 | 2.330 | 0.050 | 0.227 | 0.414 |
| trans-2-Heptene | 54 | 44 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| trans-2-Hexene | 54 | 41 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.250 | 0.050 | 0.059 | 0.032 |
| trans-2-Pentene | 54 | 7 | 0.050 | 0.050 | 0.080 | 0.140 | 0.280 | 2.280 | 0.050 | 0.179 | 0.338 |
| trans-3-Heptene | 54 | 54 |  |  |  |  |  |  |  |  |  |
| trans-3-Methyl-2-pentene | 54 | 42 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.250 | 0.050 | 0.058 | 0.030 |
| trans-4-Methyl-2-pentene | 54 | 54 |  |  |  |  |  |  |  |  |  |
| Trichloroethylene | 54 | 1 | 0.050 | 0.080 | 0.110 | 0.160 | 0.340 | 0.940 | 0.050 | 0.173 | 0.181 |
| Undecane | 54 | 0 | 0.070 | 0.110 | 0.190 | 0.300 | 0.500 | 0.660 | 0.060 | 0.225 | 0.150 |
| Vinylchloride | 54 | 54 |  |  |  |  |  |  |  |  |  |

*Notes:*

*-VOC sites are operated by Environment Canada.*

## Table 52: VOC Annual Statistics at Windsor (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | P E R C E N T I L E S | | | | | | | | |
| 1,1,1-Trichloroethane | | 0 | 0.280 | 0.320 | 0.350 | 0.390 | 0.430 | 1.360 | 0.270 | 0.386 | 0.181 |
| 1,1,2,2-Tetrachloroethane | 35 | 13 | 0.050 | 0.050 | 0.050 | 0.060 | 0.060 | 0.070 | 0.050 | 0.053 | 0.005 |
| 1,1,2-Trichloroethane | 35 | 22 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.002 |
| 1,1-Dichloroethane | 35 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| 1,1-Dichloroethylene | 35 | 6 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.100 | 0.050 | 0.065 | 0.013 |
| 1,2,3-Trimethylbenzene | 35 | 0 | 0.090 | 0.160 | 0.180 | 0.290 | 0.440 | 0.540 | 0.090 | 0.241 | 0.125 |
| 1,2,4-Trichlorobenzene | 35 | 35 | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 35 | 0 | 0.370 | 0.590 | 0.720 | 1.290 | 1.990 | 2.070 | 0.320 | 0.962 | 0.514 |
| 1,2-Dichlorobenzene | 35 | 35 | | | | | | | | | |
| 1,2-Dichloroethane | 35 | 1 | 0.060 | 0.070 | 0.090 | 0.090 | 0.100 | 0.120 | 0.050 | 0.083 | 0.015 |
| 1,2-Dichloropropane | 35 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 1,2-Diethylbenzene | 35 | 29 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.050 | 0.002 |
| 1,3,5-Trimethylbenzene | 35 | 0 | 0.120 | 0.180 | 0.230 | 0.390 | 0.630 | 0.770 | 0.110 | 0.305 | 0.171 |
| 1,3-Butadiene | 35 | 0 | 0.080 | 0.130 | 0.180 | 0.250 | 0.300 | 0.430 | 0.070 | 0.187 | 0.087 |
| 1,3-Dichlorobenzene | 35 | 35 | | | | | | | | | |
| 1,3-Diethylbenzene | 35 | 6 | 0.050 | 0.050 | 0.070 | 0.090 | 0.130 | 0.150 | 0.050 | 0.077 | 0.029 |
| 1,4-Dichlorobenzene | 35 | 1 | 0.060 | 0.080 | 0.110 | 0.140 | 0.280 | 1.780 | 0.050 | 0.184 | 0.295 |
| 1,4-Dichlorobutane | 35 | 35 | | | | | | | | | |
| 1,4-Diethylbenzene | 35 | 0 | 0.100 | 0.150 | 0.200 | 0.290 | 0.380 | 0.440 | 0.080 | 0.218 | 0.097 |
| 1-Butene/Isobutene | 35 | 0 | 0.330 | 0.460 | 0.620 | 0.930 | 1.170 | 2.830 | 0.330 | 0.751 | 0.460 |
| 1-Butyne | 35 | 35 | | | | | | | | | |
| 1-Decene | 35 | 8 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.170 | 0.050 | 0.065 | 0.024 |
| 1-Heptene | 35 | 1 | 0.050 | 0.100 | 0.150 | 0.200 | 0.270 | 0.380 | 0.050 | 0.157 | 0.079 |
| 1-Hexene | 35 | 0 | 0.150 | 0.190 | 0.220 | 0.270 | 0.320 | 0.360 | 0.130 | 0.234 | 0.059 |
| 1-Methylcyclohexene | 35 | 10 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.080 | 0.050 | 0.055 | 0.009 |
| 1-Methylcyclopentene | 35 | 5 | 0.050 | 0.050 | 0.070 | 0.100 | 0.130 | 0.160 | 0.050 | 0.079 | 0.033 |
| 1-Nonene | 35 | 16 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.170 | 0.050 | 0.058 | 0.021 |
| 1-Octene | 35 | 20 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.080 | 0.050 | 0.053 | 0.008 |
| 1-Pentene | 35 | 0 | 0.100 | 0.130 | 0.160 | 0.250 | 0.290 | 0.430 | 0.100 | 0.191 | 0.084 |
| 1-Propyne | 35 | 1 | 0.060 | 0.070 | 0.120 | 0.150 | 0.180 | 0.300 | 0.050 | 0.117 | 0.053 |
| 2,2,3-Trimethylbutane | 35 | 33 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |

## Table 52: VOC Annual Statistics at Windsor (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,2,4-Trimethylpentane | 35 | 0 | 0.230 | 0.380 | 0.560 | 0.860 | 1.080 | 1.900 | 0.210 | 0.649 | 0.361 |
| 2,2,5-Trimethylhexane | 35 | 12 | 0.050 | 0.050 | 0.050 | 0.080 | 0.110 | 0.170 | 0.050 | 0.069 | 0.029 |
| 2,2-Dimethylbutane | 35 | 0 | 0.150 | 0.190 | 0.240 | 0.330 | 0.440 | 0.520 | 0.140 | 0.269 | 0.104 |
| 2,2-Dimethylhexane | 35 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| 2,2-Dimethylpentane | 35 | 5 | 0.050 | 0.050 | 0.060 | 0.100 | 0.120 | 0.150 | 0.050 | 0.076 | 0.028 |
| 2,2-Dimethylpropane | 35 | 5 | 0.050 | 0.050 | 0.070 | 0.080 | 0.090 | 0.130 | 0.050 | 0.069 | 0.018 |
| 2,3,4-Trimethylpentane | 35 | 0 | 0.100 | 0.150 | 0.200 | 0.300 | 0.390 | 0.690 | 0.080 | 0.238 | 0.132 |
| 2,3-Dimethylbutane | 35 | 0 | 0.210 | 0.300 | 0.450 | 0.680 | 0.840 | 1.280 | 0.170 | 0.514 | 0.277 |
| 2,3-Dimethylpentane | 35 | 0 | 0.160 | 0.230 | 0.290 | 0.500 | 0.680 | 0.980 | 0.150 | 0.379 | 0.201 |
| 2,4-Dimethylhexane | 35 | 0 | 0.080 | 0.100 | 0.120 | 0.200 | 0.250 | 0.330 | 0.070 | 0.149 | 0.068 |
| 2,4-Dimethylpentane | 35 | 0 | 0.090 | 0.140 | 0.170 | 0.300 | 0.390 | 0.610 | 0.070 | 0.225 | 0.122 |
| 2,5-Dimethylbenzaldehyde | 31 | 31 | | | | | | | | | |
| 2,5-Dimethylhexane | 35 | 0 | 0.060 | 0.070 | 0.090 | 0.160 | 0.200 | 0.290 | 0.050 | 0.117 | 0.059 |
| 2-Ethyl-1-butene | 35 | 20 | 0.050 | 0.050 | 0.050 | 0.060 | 0.090 | 0.130 | 0.050 | 0.058 | 0.017 |
| 2-Ethyltoluene | 35 | 0 | 0.100 | 0.150 | 0.190 | 0.320 | 0.450 | 0.550 | 0.090 | 0.244 | 0.126 |
| 2-methyl-1-butene | 35 | 0 | 0.110 | 0.150 | 0.240 | 0.340 | 0.500 | 0.810 | 0.070 | 0.278 | 0.166 |
| 2-Methyl-2-butene | 35 | 0 | 0.140 | 0.210 | 0.250 | 0.510 | 0.830 | 1.490 | 0.120 | 0.400 | 0.302 |
| 2-Methylheptane | 35 | 0 | 0.130 | 0.160 | 0.190 | 0.310 | 0.530 | 0.670 | 0.110 | 0.256 | 0.142 |
| 2-Methylhexane | 35 | 0 | 0.220 | 0.340 | 0.450 | 0.790 | 1.150 | 1.370 | 0.200 | 0.591 | 0.342 |
| 2-Methylpentane | 35 | 0 | 0.680 | 1.150 | 1.740 | 2.480 | 3.130 | 4.590 | 0.590 | 1.899 | 0.990 |
| 3,6-Dimethyloctane | 35 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.090 | 0.050 | 0.055 | 0.011 |
| 3-Ethyltoluene | 35 | 0 | 0.240 | 0.350 | 0.460 | 0.800 | 1.160 | 1.510 | 0.180 | 0.594 | 0.344 |
| 3-Methyl-1-pentene | 35 | 17 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.100 | 0.050 | 0.055 | 0.010 |
| 3-Methylheptane | 35 | 0 | 0.090 | 0.130 | 0.170 | 0.330 | 0.470 | 0.600 | 0.080 | 0.231 | 0.139 |
| 3-Methylhexane | 35 | 0 | 0.270 | 0.380 | 0.480 | 0.870 | 1.300 | 1.630 | 0.250 | 0.673 | 0.390 |
| 3-Methylpentane | 35 | 0 | 0.570 | 0.730 | 1.150 | 1.740 | 2.260 | 2.950 | 0.460 | 1.285 | 0.667 |
| 4-Ethyltoluene | 35 | 0 | 0.130 | 0.200 | 0.250 | 0.400 | 0.600 | 0.740 | 0.130 | 0.329 | 0.170 |
| 4-Methyl-1-pentene | 35 | 16 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.090 | 0.050 | 0.055 | 0.010 |
| 4-Methylheptane | 35 | 4 | 0.050 | 0.060 | 0.080 | 0.120 | 0.200 | 0.270 | 0.050 | 0.099 | 0.058 |
| Acetaldehyde | 31 | 0 | 0.911 | 1.403 | 1.640 | 2.356 | 2.685 | 3.417 | 0.903 | 1.841 | 0.649 |
| Acetone | 31 | 0 | 1.964 | 2.633 | 3.378 | 4.400 | 5.355 | 14.255 | 1.560 | 3.806 | 2.309 |

## Table 52: VOC Annual Statistics at Windsor (2000)

**Unit: micrograms per cubic metre (µg/$m^3$)**

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetylene | 35 | 0 | 1.222 | 2.026 | 2.850 | 4.295 | 5.488 | 9.131 | 1.184 | 3.288 | 1.651 |
| Acrolein | 31 | 7 | 0.050 | 0.051 | 0.093 | 0.169 | 0.219 | 0.349 | 0.050 | 0.120 | 0.082 |
| Benzaldehyde | 31 | 1 | 0.064 | 0.105 | 0.150 | 0.246 | 0.342 | 0.449 | 0.050 | 0.188 | 0.114 |
| Benzene | 35 | 0 | 0.700 | 1.370 | 1.780 | 2.770 | 4.000 | 5.170 | 0.620 | 2.161 | 1.224 |
| Bromodichloromethane | 35 | 2 | 0.050 | 0.070 | 0.080 | 0.100 | 0.110 | 0.120 | 0.050 | 0.081 | 0.019 |
| Bromoform | 35 | 7 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.050 | 0.054 | 0.007 |
| Bromomethane | 35 | 0 | 0.100 | 0.140 | 0.150 | 0.170 | 0.170 | 0.220 | 0.090 | 0.151 | 0.024 |
| Butane | 35 | 0 | 1.570 | 3.450 | 4.960 | 7.540 | 9.040 | 16.430 | 1.420 | 5.659 | 3.223 |
| Carbontetrachloride | 35 | 0 | 0.640 | 0.670 | 0.710 | 0.790 | 0.830 | 0.960 | 0.390 | 0.732 | 0.097 |
| Chlorobenzene | 35 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Chloroethane | 35 | 1 | 0.050 | 0.070 | 0.080 | 0.090 | 0.100 | 0.100 | 0.050 | 0.079 | 0.014 |
| Chloroform | 35 | 0 | 0.080 | 0.110 | 0.120 | 0.140 | 0.200 | 0.340 | 0.070 | 0.134 | 0.048 |
| Chloromethane | 35 | 0 | 1.020 | 1.150 | 1.250 | 1.360 | 1.520 | 1.930 | 0.960 | 1.272 | 0.191 |
| cis-1,2-Dichloroethylene | 35 | 32 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| cis-1,2-Dimethylcyclohexane | 35 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.130 | 0.050 | 0.055 | 0.015 |
| cis-1,3-Dichloropropene | 35 | 35 | | | | | | | | | |
| cis-1,3-Dimethylcyclohexane | 35 | 2 | 0.050 | 0.060 | 0.070 | 0.120 | 0.180 | 0.480 | 0.050 | 0.104 | 0.082 |
| cis-1,4/t-1,3-Dimethylcyclohexane | 35 | 24 | 0.050 | 0.050 | 0.050 | 0.050 | 0.080 | 0.180 | 0.050 | 0.057 | 0.024 |
| cis-2-Butene | 35 | 0 | 0.080 | 0.110 | 0.140 | 0.250 | 0.350 | 0.970 | 0.080 | 0.200 | 0.169 |
| cis-2-Heptene | 35 | 22 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| cis-2-Hexene | 35 | 18 | 0.050 | 0.050 | 0.050 | 0.070 | 0.100 | 0.140 | 0.050 | 0.064 | 0.024 |
| cis-2-Pentene | 35 | 0 | 0.090 | 0.110 | 0.140 | 0.230 | 0.330 | 0.510 | 0.070 | 0.179 | 0.100 |
| cis-3-Methyl-2-pentene | 35 | 16 | 0.050 | 0.050 | 0.050 | 0.080 | 0.130 | 0.180 | 0.050 | 0.072 | 0.033 |
| cis-4-Methyl-2-pentene | 35 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.003 |
| Crotonaldehyde | 31 | 18 | 0.050 | 0.050 | 0.050 | 0.074 | 0.149 | 0.272 | 0.050 | 0.078 | 0.055 |
| Cyclohexane | 35 | 0 | 0.110 | 0.170 | 0.230 | 0.340 | 0.600 | 0.840 | 0.100 | 0.291 | 0.189 |
| Cyclohexene | 35 | 25 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| Cyclopentane | 35 | 0 | 0.140 | 0.220 | 0.310 | 0.430 | 0.670 | 1.260 | 0.130 | 0.361 | 0.225 |
| Cyclopentene | 35 | 8 | 0.050 | 0.050 | 0.060 | 0.080 | 0.100 | 0.140 | 0.050 | 0.070 | 0.025 |
| Decane | 35 | 0 | 0.170 | 0.230 | 0.350 | 0.490 | 0.650 | 1.410 | 0.150 | 0.403 | 0.242 |
| Dibromochloromethane | 35 | 9 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.070 | 0.050 | 0.056 | 0.007 |

## Table 52: VOC Annual Statistics at Windsor (2000)

Unit: micrograms per cubic metre ($\mu g/m^3$)

|  | # of |  | P E R C E N T I L E S |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Compounds | Samples | No. < DL | 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
| Dibromomethane | 35 | 2 | 0.050 | 0.090 | 0.100 | 0.110 | 0.130 | 0.140 | 0.050 | 0.097 | 0.023 |
| Dichloromethane | 35 | 0 | 0.290 | 0.350 | 0.480 | 0.670 | 1.270 | 5.380 | 0.280 | 0.744 | 0.905 |
| Dodecane | 35 | 0 | 0.090 | 0.120 | 0.190 | 0.290 | 0.440 | 0.470 | 0.090 | 0.219 | 0.117 |
| EDB | 35 | 10 | 0.050 | 0.050 | 0.050 | 0.060 | 0.060 | 0.080 | 0.050 | 0.056 | 0.007 |
| Ethane | 35 | 0 | 3.862 | 5.960 | 7.452 | 10.616 | 20.128 | 74.953 | 3.638 | 11.708 | 14.393 |
| Ethylbenzene | 35 | 0 | 0.370 | 0.480 | 0.690 | 1.220 | 1.910 | 2.380 | 0.320 | 0.931 | 0.573 |
| Ethylbromide | 35 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Ethylene | 35 | 0 | 1.196 | 1.877 | 2.787 | 3.822 | 4.501 | 8.935 | 0.966 | 3.066 | 1.647 |
| Formaldehyde | 31 | 0 | 1.463 | 1.788 | 2.354 | 2.915 | 4.157 | 4.490 | 0.810 | 2.555 | 0.958 |
| Freon11 | 35 | 0 | 1.650 | 1.750 | 1.820 | 1.970 | 2.140 | 2.460 | 1.510 | 1.878 | 0.188 |
| Freon114 | 35 | 0 | 0.170 | 0.210 | 0.230 | 0.270 | 0.280 | 0.320 | 0.140 | 0.237 | 0.037 |
| Freon12 | 35 | 0 | 2.540 | 2.690 | 2.870 | 3.180 | 3.290 | 3.550 | 2.300 | 2.931 | 0.293 |
| Freon22 | 35 | 0 | 0.570 | 0.630 | 0.770 | 0.840 | 0.960 | 1.130 | 0.520 | 0.761 | 0.136 |
| Heptane | 35 | 0 | 0.250 | 0.330 | 0.480 | 0.770 | 1.040 | 1.260 | 0.240 | 0.573 | 0.279 |
| Hexachlorobutadiene | 35 | 35 |  |  |  |  |  |  |  |  |  |
| Hexanal | 31 | 2 | 0.050 | 0.116 | 0.154 | 0.315 | 0.760 | 1.247 | 0.050 | 0.279 | 0.306 |
| Hexane | 35 | 0 | 0.580 | 0.830 | 1.260 | 2.560 | 2.980 | 42.600 | 0.550 | 2.728 | 6.988 |
| Hexylbenzene | 27 | 15 | 0.050 | 0.050 | 0.050 | 0.060 | 0.150 | 0.760 | 0.050 | 0.095 | 0.139 |
| Indane | 35 | 0 | 0.060 | 0.100 | 0.120 | 0.190 | 0.350 | 0.610 | 0.050 | 0.163 | 0.118 |
| Isobutane | 35 | 0 | 0.960 | 1.440 | 2.000 | 3.320 | 5.400 | 7.310 | 0.820 | 2.625 | 1.582 |
| iso-Butylbenzene | 35 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.050 | 0.051 | 0.003 |
| Isopentane | 35 | 0 | 1.800 | 2.760 | 3.850 | 6.170 | 8.020 | 15.230 | 1.590 | 4.771 | 2.952 |
| Isoprene | 35 | 0 | 0.050 | 0.090 | 0.110 | 0.190 | 0.380 | 1.140 | 0.050 | 0.189 | 0.222 |
| iso-Propylbenzene | 35 | 3 | 0.050 | 0.050 | 0.080 | 0.110 | 0.140 | 0.160 | 0.050 | 0.082 | 0.031 |
| m and p-Xylene | 35 | 0 | 0.950 | 1.360 | 1.930 | 3.520 | 5.700 | 7.280 | 0.900 | 2.673 | 1.757 |
| MEK | 31 | 0 | 0.670 | 0.793 | 1.087 | 1.650 | 2.484 | 13.490 | 0.650 | 1.826 | 2.399 |
| Methylcyclohexane | 35 | 0 | 0.140 | 0.190 | 0.260 | 0.400 | 0.600 | 0.770 | 0.100 | 0.316 | 0.175 |
| Methylcyclopentane | 35 | 0 | 0.270 | 0.400 | 0.640 | 0.940 | 1.280 | 7.490 | 0.240 | 0.857 | 1.201 |
| MIBK | 31 | 4 | 0.050 | 0.170 | 0.202 | 0.298 | 0.439 | 1.627 | 0.050 | 0.279 | 0.285 |
| m-Tolualdehyde | 31 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.055 | 0.092 | 0.050 | 0.052 | 0.008 |
| n-Butylbenzene | 35 | 8 | 0.050 | 0.050 | 0.060 | 0.080 | 0.120 | 0.130 | 0.050 | 0.071 | 0.025 |

## Table 52: VOC Annual Statistics at Windsor (2000)

Unit: micrograms per cubic metre (µg/m$^3$)

| Compounds | # of Samples | No. < DL | PERCENTILES 5% | 25% | 50% | 75% | 90% | Max. | Min. | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nonane | 35 | 0 | 0.130 | 0.160 | 0.230 | 0.360 | 0.450 | 0.770 | 0.110 | 0.280 | 0.148 |
| n-Propylbenzene | 35 | 0 | 0.090 | 0.120 | 0.170 | 0.260 | 0.360 | 0.450 | 0.080 | 0.205 | 0.106 |
| Octane | 35 | 0 | 0.140 | 0.180 | 0.210 | 0.350 | 0.510 | 0.770 | 0.130 | 0.282 | 0.155 |
| o-Tolualdehyde | 31 | 31 | | | | | | | | | |
| o-Xylene | 35 | 0 | 0.310 | 0.450 | 0.590 | 1.180 | 1.790 | 2.020 | 0.300 | 0.841 | 0.516 |
| p-Cymene | 35 | 2 | 0.050 | 0.060 | 0.080 | 0.170 | 0.510 | 0.860 | 0.050 | 0.172 | 0.191 |
| Pentane | 35 | 0 | 1.050 | 1.590 | 2.050 | 3.000 | 4.240 | 8.840 | 0.890 | 2.521 | 1.543 |
| Propane | 35 | 0 | 1.910 | 3.520 | 6.180 | 9.440 | 17.300 | 28.280 | 1.890 | 8.014 | 6.207 |
| Propionaldehyde | 31 | 0 | 0.272 | 0.379 | 0.461 | 0.594 | 0.689 | 1.052 | 0.244 | 0.499 | 0.173 |
| Propylene | 35 | 0 | 0.430 | 0.560 | 0.890 | 1.190 | 2.040 | 3.170 | 0.360 | 0.997 | 0.594 |
| p-Tolualdehyde | 31 | 28 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.077 | 0.050 | 0.052 | 0.006 |
| sec-Butylbenzene | 35 | 23 | 0.050 | 0.050 | 0.050 | 0.050 | 0.060 | 0.070 | 0.050 | 0.052 | 0.005 |
| Styrene | 35 | 0 | 0.070 | 0.110 | 0.160 | 0.230 | 0.320 | 0.490 | 0.050 | 0.187 | 0.104 |
| tert-Butylbenzene | 35 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| Tetrachloroethylene | 35 | 0 | 0.170 | 0.250 | 0.390 | 0.620 | 0.920 | 4.930 | 0.160 | 0.570 | 0.793 |
| Toluene | 35 | 0 | 1.510 | 2.360 | 3.360 | 6.320 | 12.940 | 42.370 | 1.340 | 6.183 | 8.009 |
| trans-1,2-Dichloroethylene | 35 | 35 | | | | | | | | | |
| trans-1,2-Dimethylcyclohexane | 35 | 10 | 0.050 | 0.050 | 0.050 | 0.090 | 0.160 | 0.320 | 0.050 | 0.079 | 0.055 |
| trans-1,3-Dichloropropene | 35 | 34 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.000 |
| trans-1,4-Dimethylcyclohexane | 35 | 23 | 0.050 | 0.050 | 0.050 | 0.050 | 0.090 | 0.180 | 0.050 | 0.058 | 0.025 |
| trans-2-Butene | 35 | 0 | 0.090 | 0.110 | 0.170 | 0.310 | 0.390 | 1.500 | 0.080 | 0.236 | 0.251 |
| trans-2-Heptene | 35 | 27 | 0.050 | 0.050 | 0.050 | 0.050 | 0.050 | 0.070 | 0.050 | 0.051 | 0.005 |
| trans-2-Hexene | 35 | 13 | 0.050 | 0.050 | 0.050 | 0.090 | 0.100 | 0.160 | 0.050 | 0.068 | 0.027 |
| trans-2-Pentene | 35 | 0 | 0.080 | 0.120 | 0.160 | 0.300 | 0.440 | 0.730 | 0.080 | 0.228 | 0.153 |
| trans-3-Heptene | 35 | 35 | | | | | | | | | |
| trans-3-Methyl-2-pentene | 35 | 20 | 0.050 | 0.050 | 0.050 | 0.080 | 0.110 | 0.170 | 0.050 | 0.066 | 0.029 |
| trans-4-Methyl-2-pentene | 35 | 35 | | | | | | | | | |
| Trichloroethylene | 35 | 0 | 0.070 | 0.110 | 0.130 | 0.190 | 0.280 | 0.540 | 0.060 | 0.166 | 0.100 |
| Undecane | 35 | 0 | 0.170 | 0.220 | 0.290 | 0.420 | 0.570 | 1.180 | 0.160 | 0.357 | 0.203 |

## Table 52: VOC Annual Statistics at Windsor (2000)

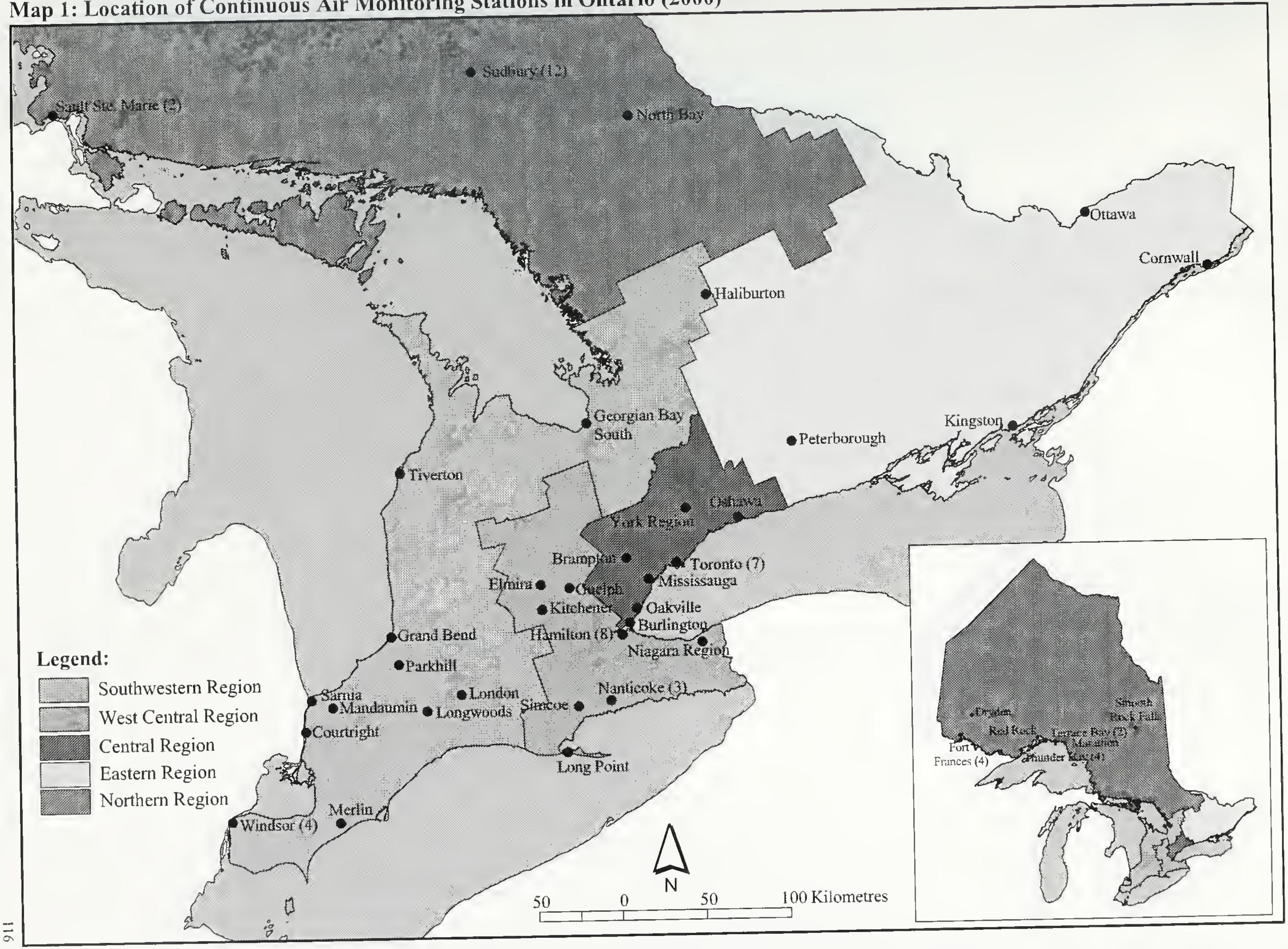
Unit: micrograms per cubic metre (µg/m$^3$)

|  | # of |  | P E R C E N T I L E S |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Compounds** | **Samples** | **No. < DL** | **5%** | **25%** | **50%** | **75%** | **90%** | **Max.** | **Min.** | **Mean** | **Std. Dev.** |
| Valeraldehyde | 31 | 2 | 0.050 | 0.086 | 0.113 | 0.226 | 0.418 | 0.505 | 0.050 | 0.173 | 0.133 |
| Vinylchloride | 35 | 35 |  |  |  |  |  |  |  |  |  |

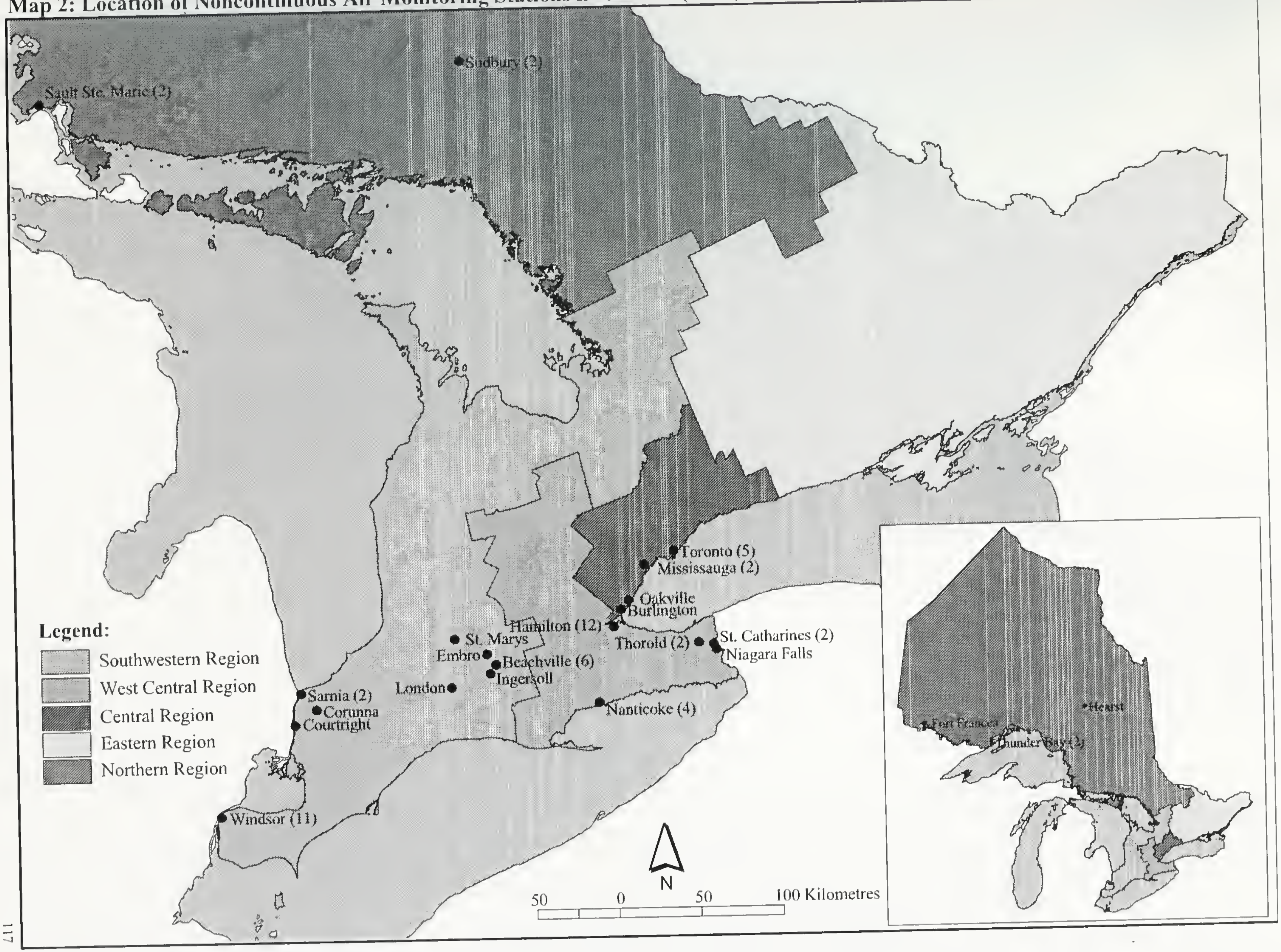
*Notes:*

*-VOC sites are operated by Environment Canada.*

Map 1: Location of Continuous Air Monitoring Stations in Ontario (2000)



## Map 2: Location of Noncontinuous Air Monitoring Stations in Ontario (2000)



# Map 3: Location of Meteorological Stations in Ontario (2000)